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# ANNUAL REPORTS

OF THE

## DEPARTMENT OF THE INTERIOR

FOR THE

FISCAL YEAR ENDED JUNE 30, 1904.

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### MISCELLANEOUS REPORTS.

#### PART II.

GOVERNOR OF ARIZONA.

GOVERNOR OF NEW MEXICO.

GOVERNOR OF OKLAHOMA.

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1904.





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# REPORT OF THE GOVERNOR OF ARIZONA.

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# REPORT

OF THE

## GOVERNOR OF ARIZONA.

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EXECUTIVE DEPARTMENT,  
OFFICE OF THE GOVERNOR,  
*Phoenix, Ariz., August 18, 1904.*

SIR: In compliance with the instructions contained in your letter of June 24, I have the honor to submit the following report of the affairs, progress, and development of the Territory of Arizona for the fiscal year ended June 30, 1904:

### GENERAL CONDITIONS.

Mining, agriculture, and stock raising are the chief industries in Arizona. During the past year there has been marvelous advancement in the mining operations throughout the Territory. The production of copper is greater than any previous year. Agriculture has not advanced much, owing to the scarcity of water in the streams caused by the light snowfalls during the winter and the almost complete deprivation of rains. The live-stock industry has suffered more, perhaps, than any other, thousands of cattle having died during the latter months of the year.

Conditions change rapidly in the arid regions. While the disastrous effects of droughts are keenly felt in all lines of commercial activity, recovery is swift when conditions change for the better. Those industries that first feel the blow are the first to resuscitate. Prices always advance with adversity in farming, but when the farmer has nothing to sell there is little comfort in this observation.

Dependence is placed in the flow of streams for carrying on successful agricultural and horticultural operations in the valleys of the Territory. Under such conditions there can be no certain progress. Water storage is the only safe plan in the arid sections, and until dams are constructed and the flood waters stored the farmer can never feel assured of a full crop.

The people of Arizona are deeply indebted to the honorable Secretary of the Interior for the Tonto dam, now under construction, and the Yuma project, also assured. They feel that the wisdom shown in these selections will prove a blessing to the Southwest, and eventually yield a rich harvest in national progress. The early completion of these structures, by means of which the flood waters will be saved, will bring prosperity to a deserving people.

Not only agriculture, but mining, stock raising, and all other industries depend upon rain and snow for success. Mining, perhaps, is less dependent than the other industries, but in its incipency it progresses as conditions are favorable. A great many places where irrigation is practiced the rainfall is sufficient to produce a yield of crops, and artificial irrigation is merely an assistance to bring out a full yield. But in this Territory lands can not be cultivated without artificial irrigation. Therefore, absolute dependence is placed on the flow of streams.

In the Salt River Valley the average precipitation of rain for twenty years was but 6.90 inches. For the year ended June 30, 1904, the precipitation in the Territory was 3.97 inches less than the average of past records, which is taken as the normal.

There was a deficiency in July, the month of greatest normal precipitation, though considerable rain fell during the month; but in August there was an excess, and in September a decided excess, due mainly to heavy rains the latter part of the month. The about normal precipitation of the preceding year, followed by the fair to good rains of July, August, and September, produced a supply of irrigation water which was generally sufficient for the requirements of vegetation. The good rains at the end of September were, however, followed by an extended period of exceedingly dry weather. From October 4 to December 4 no rain whatever fell within the Territory. The droughty condition continued throughout the remainder of the year, though it was occasionally broken by light rains or snows. These were, however, insufficient to materially affect the flow of water in streams, the soil having been dried out so thoroughly as to absorb most of the moisture. In May the precipitation, which occurred mainly in the northeastern and southeastern portions, averaged in excess of the normal, but the normal for May is low, and no material general increase in the flow of streams resulted.

The departures from the normals by months, as reported by Mr. M. E. Blystone, section director at Phoenix, were as follows:

*Departure from normal precipitation by months.*

Month.	Inches.	Month.	Inches
1903.		1904.	
July .....	-0.70	January .....	-0.82
August .....	+ .13	February .....	- .49
September .....	+ .78	March .....	- .49
October .....	- .61	April .....	- .30
November .....	- .74	May .....	+ .33
December .....	- .90	June .....	- .16
		Year .....	-3.97

Crops were generally in good condition at the end of the preceding year, and range feed was abundant. The favorable conditions which prevailed during the latter part of the crop season of 1903 caused good crops to be matured throughout the Territory, and the abundant supply of range feed brought range stock into excellent condition. The heavy rains of the latter part of September placed the soil in excellent condition for fall seeding, but the drought which followed prevented the germination of much of the winter-seeded grain. The continuation of droughty conditions throughout the early part of the

crop season of 1904 and the steady diminution of the supply of irrigation water, which became totally inadequate to meet the requirements of vegetation, damaged crops greatly, and at the end of June these were generally in very unfavorable condition, except in the lower Colorado Valley, where the abundant supply of water furnished by the Colorado River produced excellent crops. The condition of range stock, which had been good until toward the end of the year 1903, deteriorated greatly. Range feed became scarce, and in many sections water could not be obtained. As a consequence all stock suffered greatly and there were large losses by death. This deplorable condition existed at the end of June.

In the statistical appendix, on page 145, will be found tables showing the amount of snowfall at selected places in the Territory during the winter and spring months of the past fiscal year.

The surface of the Territory consists of elevated table-lands, intersected by mountains and interspersed by valleys, many of which are of vast extent. These plains or valleys are as fertile as the far-famed plains and valleys of the Nile, and when brought under cultivation give marvelous returns in grain, fruits, and other products of the soil. It can be truly said of Arizona that in no other country under the sun can there be secured so great a return per acre as can be derived in this Territory by the application of water to and the proper cultivation of the soil.

The Territory possesses one of the finest and most valuable forests in the world, known as the "Mogollon forest," which covers an area of 10,000 square miles, being possibly, with two exceptions, the most extensive body of timber in the world.

Arizona's resources are without limit; its mountains are the store-houses of precious metals, its forests the greatest in the United States, its plains sustain vast herds of cattle and sheep, while valleys produce grains and fruits unexcelled anywhere. It is to-day one of the richest mineral sections in America, and although the mining of the precious metals in this Territory is as yet in its infancy, enough is known to give a slight inkling of the possibilities of this great wealth-producing agency which is eventually to make Arizona one of the richest subdivisions of our country. Every mountain range that has been prospected has shown a wealth of minerals—gold, silver, and copper mining being successfully pursued.

Arizona is blessed with one of the best systems of public schools in the United States. The morals of the people are most excellent, and are cared for by the numerous churches scattered throughout the Territory, which receive intelligent and liberal support from all citizens.

#### PUBLIC HEALTH.

During the past year the health of the people of Arizona has been excellent. There has been scarcely any sickness of a general character throughout the Territory. There were a number of isolated cases of smallpox reported to the Territorial health board. There was one case of anthrax reported, which happily proved to be due to streptococci germs.

The Territorial board of health has been zealous in its efforts to prevent the spread of disease, and has been successful wherever cases were reported. At a meeting of the board in April the rules of the national



board of health governing the transportation of dead bodies were adopted; also a rule requiring embalmers and undertakers to register with the Territorial superintendent of public health. This rule is a great aid to the vital statistic department, as all embalmers are required to make duplicate reports of all deaths, thus giving a complete record of the Territory in this respect.

#### POPULATION.

There has been some considerable increase in population in the Territory during the past year, noticeable principally in the mining districts. Just what this increase has been is impossible to ascertain, but I feel safe in saying that it has kept the percentage fully up to the average of late years. The total population of the Territory is in the neighborhood of 165,000 to 170,000.

The census of 1900 gave the Territory 122,212. In 1890 it was but 59,620, making an increase of 104.9 per cent during the decade. This large increase is due in part to the fact that there were 28,469 Indians and 154 other persons, or a total of 28,623 persons, on Indian reservations, etc., in Arizona who were specially enumerated in 1890 under the provisions of the census act, but were not included in the general population of the Territory at that census. The population of the Territory in 1870 was 9,658, and during the ten years from 1870 to 1880 it increased 30,782, or 318.7 per cent, giving a population in 1880 of 40,440. The population for 1890, as stated in the report for that census, was 59,620, representing an increase during the decade of 19,180, or 47.4 per cent.

The superintendent of public instruction, in his annual report for 1904, states that the school population throughout the Territory has greatly increased. In Cochise County alone the attendance is 1,000 greater than the previous year; in Yavapai County a considerable increase is noted; and in Maricopa, Graham, Pima, and Yuma there are evidences of this same character that the population is greater than the preceding year. There can be no doubt of the accuracy of my estimate of the present population of the Territory as given herein. The school population is the best index to the general increase or decrease in population, and with this as a basis the increase throughout the Territory has been considerable during the past year.

The population of Arizona has increased steadily from the time the Indian troubles were settled. There has been no backward step. The conditions were not inviting, for great numbers of settlers could not locate lands and expect profits from agriculture unless water was available. The area of land that could be cultivated was therefore small, and population could not go beyond the area favored. Mining attracted many from the eastern States, and each year new camps have come into existence to augment the population of the Territory. It is probably safe to say that agriculture in the Territory has reached the full extent of the natural water supply, and without the hope afforded by the Government dams now under construction there would be little increase in population in the valleys of the Territory.

What the population of Arizona will be in ten years can easily be imagined. Hundreds of thousands of acres of fertile lands will then be under cultivation; certain water supply will assure full yields each year of all products; mining and all other industry will receive assist-

ance from agriculture, and Arizona will be known as one of the richest States in the Union.

To-day we are forced to admit that there is not a valley in the Territory where land is available to the homesteader where he can settle down to the successful pursuit of agriculture with the independence of a Mississippi Valley farmer. Population can not materially increase under such conditions. With a great system of water storage established in Arizona all public land susceptible of irrigation will be at the disposal of the husbandman. There will be land for millions where there is to-day scarcely enough for the present population. Arizona contains more than 10,000,000 acres of land that can be cultivated. Under water-storage conditions in a climate as mild as that of the Arizona valleys the yield of crops per acre will be very large. Seven crops of alfalfa can be harvested where four are now produced. Small ranches will be the rule under such conditions, and the population will be greater per acre than in the Middle and Eastern States. More will be expected of a man by each separate acre, and the capacity of each acre to produce will be from five to seven times greater than under natural conditions.

Agriculture will force other industries ahead; new towns will appear and the older ones will expand; more people will be required in all branches of industry. The mines, assisted in their development by agriculture, will expand in activity, and more laborers will be required.

The live-stock industry, supported by certain pasturage in the valleys, will become a great industry throughout the Territory, adding millions to the taxable wealth. New railways will be built fostering other branches of industry, and all undeveloped resources will receive attention. Arizona will be forced to the highest point of its capacity to produce wealth from all its varied sources.

Extravagant claims are often made, but the possibilities are so great and so far-reaching that no man can dispute them. It can be safely said that Arizona has to-day merely laid the foundation of its future growth.

#### STATEHOOD.

As loyal and patriotic citizens of a great nation it is but natural that the people of Arizona desire the full prerogative of citizenship. They have built up a commonwealth with that promise, and they believe that they have met all the requirements in social advancement, material achievements, and in the economic management of internal affairs. The population of Arizona to-day is larger than that possessed by almost any of the Territories when admitted to statehood, and in material resources Arizona is probably far in advance of any of the now prosperous States on the day of their admission.

The progress made from year to year is substantial. The production of copper, gold, and silver increases rapidly each year. The old mines become heavier producers and many new ones are constantly augmenting the yield of wealth from this source.

The history of the Territory since its formation in 1863 shows the adverse conditions that retarded progress and the indefatigable energy and perseverance with which they were met and surmounted. The pioneers had first to tame hostile tribes of Indians and bring about new conditions of life before they could hope to accomplish much in material progress.



The physical conditions were such that agriculture could not be made a source of wealth production at once, and irrigation systems had to be inaugurated. Fighting constantly against adversities, the people of Arizona have never yielded an inch, and it must be conceded by all fair-minded men that their achievements are worthy of recognition by the nation in the bestowal upon them of the full privileges of citizenship.

Finding themselves confronted with a plan to unite their Territory with New Mexico, the people of Arizona have protested vigorously, and they will continue to do so until they have defeated this repugnant scheme. The injustice of it should readily appeal to all. Here men have fought for over forty years to strengthen a commonwealth; over \$45,000,000 of taxable wealth have been accumulated; \$1,000,000 has been invested in churches and church schools; over \$1,000,000 has been given to the cause of education in the construction and equipment of public schools; at different points throughout the Territory are located public buildings constructed by the Territory, and everywhere there exists a public spirit and patriotism which shows the character of the people. To be united with New Mexico would bring discouragement to Arizonians. Both districts of the new State would suffer, for the reason that Arizona people would lose heart, and the strife engendered by jealousies would take years to subside. It is natural that Arizonians, proud of what they have accomplished, would feel that they had worked in vain; New Mexico, with its larger population and its greater power, would naturally seek to strengthen its portion, impelled by the hope of division at some later day.

The two Territories as they stand to-day are different in many ways. They have little in common; their laws are dissimilar. It is doubtful if they could ever become reconciled to exist under one form of State government. The same local patriotism existing in Arizona is also to be found to a great extent in New Mexico, notwithstanding the claims of a few citizens of the neighbor Territory who are willing to take this form of statehood rather than none at all. I believe the merger would not be acceptable to the mass of people of either Territory.

I can not add to the protest that has already been made by the people of the Territory of Arizona against this reprehensible measure, and I have only to say that they would desire that their commonwealth remain a Territory indefinitely rather than be joined with New Mexico. They desire to come into the Union as the State of Arizona with the present Territorial boundary, and until, in the wisdom of the nation's legislators, they are permitted to do this, they are content to remain as they are, trusting in the justice of the future years to bring the boon so earnestly sought.

#### FINANCIAL CONDITION.

Arizona was never in better financial condition. The floating indebtedness, which on June 30, 1903, was \$92,341.90, has been completely wiped out, and \$20,848.85 remained in the general fund on the close of the fiscal year 1904.

The report of the Territorial treasurer shows that there was received from all sources during the year ended June 30, 1904, the aggregate sum of \$829,922.27, including \$177,762.54, the balance on hand June



30, 1903. From this there was disbursed \$640,628.42, leaving \$189,-293.85 on hand June 30. Territorial warrants are now paid in cash, a condition which has not existed since the Territory was organized.

This creditable showing is due to retrenchment in public expenditures, aided by the revenue derived from incorporation business transacted in the office of the Territorial auditor. On March 13, 1903, the act of the twenty-second legislative assembly went into effect transferring the incorporation business from the office of the secretary of the Territory to the Territorial auditor, and giving the fees collected to the Territory. Previous to that time these fees went to the secretary of Arizona, and they amounted to thousands of dollars annually. The total amount collected from this source from March 19, 1903, to June 30, 1904, was \$41,111.25.

The bonded indebtedness of the Territory at the close of the fiscal year, as shown by the statement of the Territorial treasurer, which appears in the statistical appendix of this report, was \$1,010,972.43. During the year \$10,154 of insane asylum bonds, with accrued interest, were paid.

The tax levy, as fixed by the board of equalization of the Territory, is the lowest since 1900. For each \$100 of valuations the Territorial tax is 95 cents. In 1903 it was \$1.05; in 1902 it was \$1.13 $\frac{7}{10}$ ; and in 1901, \$1.17. When consideration is given to the extensive improvements made in Territorial institutions since 1900, when the tax levy was but 85 cents, it will be seen that the tax of 1904 is proportionately lower than at any time in the history of the Territory. New buildings have been erected to accommodate the growing needs of the University of Arizona at Tucson; additions have been made to the Tempe Normal School; improvements and extensions have been made at the Territorial penitentiary; the Territorial industrial school has been erected and placed in operation; substantial improvements have been made at the Northern Arizona Normal School at Flagstaff; and large expenditures represented in Territorial bonds have added to the responsibility and substantiability of the Territory. While the valuation of taxable property in the Territory is \$12,560,025.03 more than it was in 1899, the tax rate, with all the added improvements in Territorial institutions, is but 10 cents more in 1904.

Many of the railways in the Territory are exempt from taxation, \$1,000,000 of church property is not taxed, and the system of taxing mines gives the Territory but little revenue. A very small tax placed on the net production of all mines would yield sufficient revenue to materially lessen the Territorial tax on all other property.

The condition of banks as reported in the statement of the bank comptroller, given in the statistical appendix of this report, shows a gain over the preceding year and presents a healthful condition of these financial institutions.

On the whole the Territory is in most excellent condition at the close of the fiscal year.

#### TAXATION AND TAXABLE PROPERTY.

There has been a gain in the taxable property in the Territory during the year amounting to \$1,981,504.70. The total taxable property of the several counties is \$45,069,545.32.

The tax levy of 95 cents on the hundred dollars of valuation is the

lowest since 1890, and, proportionally, lower than any year of the Territory's history. The expense of new Territorial institutions, such as the industrial school, additions to the university and normals, the prison, and asylum for the insane, keeps the tax rate high in Arizona, yet each year since 1900 there has been a reduction in this rate, and there is every reason to believe that it will continue to decrease from year to year.

Many reforms in the method of taxation are needed before the full valuation of all taxable property can be ascertained. It is apparent that the valuations of live stock as returned by many of the counties to the board of equalization are inaccurate. The full number of live stock in the Territory, if taxed in the different counties, would materially increase the income derived from taxable property.

The mining industry escapes its just share of taxation. The income that could be derived from this source would greatly lessen the tax levy for all other property, and would in no sense retard the progress of that great industry. A very small tax on the gross bullion production of all mines would give the Territory an immense income, and there could be no objection on the part of mine owners in rendering this assistance to the Territory in which their mines are located and whose protection is ever freely given. This matter was brought to the attention of the last legislature in the message of the governor.

The report of the board of equalization which appears in the statistical appendix to this report shows the following counties to have gained in taxable wealth during the year, the amount appearing after the name of the county: Apache, \$40,740.22; Cochise, \$1,096,993.99; Graham, \$1,052,177.71; Maricopa, \$98,214.03; Mohave, \$45,120.44; Pima, \$211,116.17; Yavapai, \$172,065.80; Yuma, \$5,132.10.

The counties showing losses are: Coconino, \$437,475.64; Gila, \$60,097; Navajo, \$125,136.81; Pinal, \$33,337.59; Santa Cruz, \$84,008.72.

The losses of live stock during the year by reason of the prolonged drought occasioned much loss of revenue to the stock-raising counties, some of them this year showing but one-half the number of cattle that was reported last year. The action of the Government in setting aside forest reserves has also lessened the revenues in some of the northern counties.

#### EDUCATION.

The advancement made in school work throughout the Territory is a pleasing index to the general character of school officers, the high standard of excellence which they demand of instructors, and the interest manifested by the people of the Territory. Teachers who have had special training in school work have been demanded, the records of the office of the superintendent of public instruction showing at least 65 per cent of the teachers employed to be graduates of normal schools, universities, and colleges of high rank. Graduates of the two Territorial normal schools are engaged long before they receive their diplomas of graduation. The demand in Arizona during the year shows that the people realize the necessity of securing the best instructors, and trained teachers find no trouble in securing employment. The graduates of the Arizona normal schools are admitted to the schools of California and other Western States without examination.

The examining board of the Territory is careful in giving diplomas to teachers coming from other States and Territories, demanding that



they shall have been trained for the work. Examinations are very strict and exacting, every safeguard being taken to insure the entrance in the schools as teachers of only those possessing the highest qualifications.

There are two normal schools, one at Tempe and the other at Flagstaff; three high schools, organized under a special high school law, one being at Phoenix, one at Prescott, and one at Mesa. The graduates of these high schools are admitted to colleges of high standing on their diplomas of graduation.

During the past year the total receipts for school purposes was \$440,000. Of this sum \$330,000 was solely for the maintenance of the public schools, the sum of \$110,000 being used for the redemption of bonds, payment of interest, and miscellaneous purposes. The total receipts were about \$23,000 more than the previous year.

Owing to extensive building operations, the disbursements have been more than the receipts, the total amount expended being \$525,000. Of this sum \$390,000 was for school maintenance, and \$135,000 for the payment of bonded indebtedness, building, and miscellaneous purposes. The excess in expenditures was about \$28,000 over the previous year. Seventeen new school buildings have been constructed during the year, and extensive improvements made in all school property. The number of new school districts organized was 19.

The school population has not increased as rapidly as in previous years. Cochise County made the greatest gain in this respect, showing an increase of over 1,000 children of school age enrolled in the schools of that county. Other counties have gained in school population, although the total increase is but 3.75 per cent. The enrollment has increased 6 per cent, and the average daily attendance 8.5 per cent.

Owing to the increased enrollment of pupils, 37 additional teachers have been employed in the Territory. The number of children between 6 and 21 years of age, as reported by the superintendent of public instruction, was, on June 30, 1904, 27,051; the enrollment for the year was 21,220; and the average daily attendance was 13,000.

The school districts of the various counties received some assistance by the apportionment of \$33,066.74, received from taxes exacted by the Territory from foreign insurance companies doing business in the Territory, and other sources.

#### UNIVERSITY OF ARIZONA.

Substantial progress has been made by the Territory's leading educational institution during the year. The gymnasium has been equipped with apparatus and furnishings necessary for rendering the greatest benefit to the students, including shower baths and lockers, the expenditures along this line slightly exceeding \$2,000. The new library and museum building was ready for the roof at the close of the fiscal year. This structure will cost \$26,000 when completed. Two new green-houses have been erected for experiment work at a cost of about \$500; the mill building of the school of mines was removed to a new site and rebuilt at a cost of \$1,628; new drives have been laid out and roads constructed, trees planted, and other decided improvements made in the grounds.

The attendance increased during the year to 205, and the faculty was increased by additional instructors in metallurgy and athletics.

The purpose of the University of Arizona is, in the language of the organic law, "to provide the inhabitants of this Territory with the means of acquiring a thorough knowledge of the various branches of literature, science, and the arts;" and so far as possible a technical education adapted to the development of the peculiar resources of Arizona. In furtherance of this latter purpose, instruction is especially provided in agriculture, the mechanic arts, and in mining and metallurgy. The agricultural experiment station, a department of the university, is wholly engaged in investigating and developing the agricultural resources of the Territory. The institution aims to fill in the Territory the place occupied in the States by the State universities. The undeveloped condition of secondary education in the Territory and the desire to make the university serviceable to all have led to the establishment and maintenance of a subcollegiate department.

The University of Arizona is located at Tucson, one of the largest towns in the Territory, on the main line of the Southern Pacific Railway, 312 miles west of El Paso, Tex., and 500 miles east of Los Angeles, Cal. The town lies in a broad, flat valley at an elevation of 2,400 feet above sea level, and is surrounded by mountains. Its dry, healthful situation, with its mild and equable climate, has made Tucson a famous winter resort.

The winter climate is especially good; the temperature is cool and strengthening but not severe, the lowest temperature recorded during the average year being about 20° F. Little rain falls during the winter; fogs are unknown; cloudy days are rare. The percentage of sunshine throughout the winter is greater than that recorded at any other place in the United States. Owing to the extreme dryness of the air the highest temperatures known are less oppressive to the senses and less dangerous to the health than the summer heat of the upper Mississippi Valley States. The total amount of rainfall averages less than 12 inches.

The university is situated upon high ground, about a mile from the business center of the city, with which it is connected by a street-car line. On every side it commands a view of mountain scenery of remarkable extent and grandeur. The location can not be surpassed for healthfulness. The water supply of the university is drawn from a well on the campus 120 feet deep, and is of unusually good quality.

The main building, University Hall, is 200 by 105 feet, two stories in height, the first story of gray stone, the second of red brick, and is completely surrounded by a wide two-story veranda. The building contains the administrative offices, recitation rooms, laboratories, and apparatus rooms of various departments, the libraries of the university and experiment station, and the Territorial museum.

North Hall, a dormitory two stories in height, built of gray stone of fine quality, originally provided as a home for male students, is now occupied by the young women. Besides the parlor and the rooms of the matron, it contains 16 rooms, each large enough to accommodate two students. The building was renovated in 1903, a large and handsome parlor being fitted up and furnished by the university.

South Hall, a brick dormitory containing 40 rooms, with bath and toilet rooms, is for the use of male students and instructors. The discipline of this dormitory is in charge of the commandant of cadets.



A new dining hall 40 by 104 feet in size, with kitchen, provides ample accommodations for all persons living in the dormitories.

A library and museum building to cost \$26,000, exclusive of furnishing, provided by the twenty-first legislative assembly, has been in course of erection during the current year. The contract calls for completion of the building in September, 1904. Five thousand dollars was appropriated by the last legislative assembly for furnishings.

The gymnasium, given the university by Prof. James Douglas and his associates of the Copper Queen Consolidated Mining Company, is now completed. With the \$2,000 appropriated by the legislative assembly for equipment, a large quantity of first-class gymnasium apparatus has been purchased and installed. Shower baths with necessary plumbing, and about 100 lockers have put the gymnasium in excellent shape for steady use.

The shop and assay building is a large substantial brick structure. It contains a commodious drawing room for mechanical and freehand drawing, a large forge, machine and carpentry laboratory, in which are placed 24 forges, 4 lathes, drills, besides engine and locker rooms. The commercial assaying department occupies a suite of rooms fully equipped with a large melting furnace, the necessary muffle furnaces, and other accessories for making complete and accurate assays.

The mill building is located on the tract of land at the northeast of the campus, acquired by the university with the \$1,400 appropriated for that purpose by the last legislative assembly. The building with machinery, formerly constituting the annex to University Hall, was removed in the fall of 1903 to the new site.

Three brick houses, two stories in height, are occupied as homes by the president and professors.

Other buildings are the boiler house, which also contains the well and pumps whereby the water supply for irrigation and general purposes is obtained; a greenhouse, 80 by 21 feet; two propagating houses; the cottage operated by the classes in domestic science, and a temporary wooden building used for various purposes.

The library, containing 8,100 bound volumes, and 11,000 pamphlets, is open to the use of all students. A valuable feature of the library is the collection of complete sets of scientific and literary periodicals, which are of special service in research work.

The reading room is furnished with about 70 scientific, literary, and general periodicals, besides the weekly Territorial newspapers.

The Carnegie Library of the city of Tucson is also open to the use of the students of the university.

The seventeenth legislative assembly of Arizona passed an act establishing a general museum at the university. The object of the museum is to collect materials of all kinds illustrating the resources and development of Arizona, and particularly to preserve historical relics, including those pertaining to the aboriginal inhabitants.

Donations of specimens and collections will be received and gratefully acknowledged, but no special provision has yet been made by the Territory for the support of this department, aside from a small appropriation for the salary of a curator.

The collections now displayed at the university comprise representative series of minerals, ores, and rocks of Arizona. Among these may be particularly mentioned superb specimens from the mines of the Copper Queen at Bisbee. There are also collections of typical

rocks and minerals for comparison, and many specimens of ores from different parts of the United States and from abroad. Great numbers of valuable specimens are now stored in trays preparatory to classification and distribution in cases. It is desired to make the collection of ores and minerals fully represent the great mineral resources of Arizona.

The museum is indebted to Mr. Herbert Brown, curator, for a large and valuable collection of skins of the birds of Arizona, which he has deposited in the museum, as well as for a collection of ancient aboriginal pottery and other relics. The fossil skull and teeth of an elephant and other fragmentary remains of extinct animals sent from Yuma by Mr. Brown also deserve special mention.

Historical records of much value are gradually accumulating as a part of this museum, and an appeal is made to old settlers and others to bear this fact in mind when making disposition of articles bearing even remote relation to the early pioneers and their history.

The professors at the university have the immediate care of the collections pertaining to their respective departments.

The biological laboratories are located in that portion of University Hall formerly occupied by the museum. The laboratories are convenient and well lighted and the equipment is such as is required for modern instruction and research in the biological sciences. The library and apparatus are well selected and adapted to the region and the courses offered.

The collections possessed by this department form a very important part of its equipment. The herbarium consists of 12,000 sheets of mounted plants, of which number 2,500 are included in the university botanical survey herbarium. The unique flora and fauna of the mountain, mesa, and lowland collecting grounds in close proximity to the institution offer very attractive opportunities for instruction and research, especially along ecological lines. The desert botanical laboratory of the Carnegie Institution supplements in most admirable fashion the facilities of the university for investigation.

In addition to the above there are 50 cases of insects, a large case of seeds, articulate and disarticulate human skeletons, plaster and papier-maché models of the important structures of the human anatomy, and duplicate material for study and dissection.

The chemical laboratories are two in number. That used for beginners in the study of general chemistry and qualitative analysis is on the second floor of University Hall and is equipped for the experimental and theoretical study of chemical science.

The laboratory for qualitative analysis is on the first floor of University Hall. It is provided with analytical and bullion balances of the latest model and is equipped for the teaching of volumetric and gasometric analysis, blowpipe analysis, metallurgical chemistry, and wet and fire assaying, including apparatus for the electrolytic determination of metals. A portion of the room formerly used as an assembly hall has been fitted up as a balance room.

The chemical apparatus and collections are adequate and the equipment is good, but the increase in the number of students has overcrowded the laboratories.

The laboratory of the experiment station occupies three rooms on the first floor, being devoted to analytical work and chemical investigations relating to agriculture. Though not intended for the use of



students, it is of incidental value to the institution through the investigations which are here conducted.

The laboratory for quantitative analysis is used for determinative mineralogy and blowpipe analysis. The laboratory is supplied with necessary apparatus for student work, including glass and wood models for the study of crystallography, hand and reflecting goniometers for the measurement of the angles of crystals, and a polariscope for the study of the optical properties of minerals, and a type set of 600 minerals.

Three rooms on the first floor are set apart for the teaching of physics. The facilities for experimental demonstration of all important phenomena are very complete. The lecture room is fitted with shutters so that it can be darkened. A beam of sunlight directed by a fine clock heliostat outside may be thrown steadily across the lecture table for experiments in light, or used in connection with the solar lantern for a variety of other work. Adjacent to the lecture room are the laboratory and the apparatus room. Both lecture room and laboratory are supplied with water and gas.

An 8-inch Willyoung induction coil, with storage and X-ray accessories, is used in the study of light-tension electricity.

This department has also a double dissolving arc-light Ideal stereopticon, which is used by various other departments of the university.

In a partly developed territory like Arizona the engineer is called upon for the solution of a great variety of problems in the various lines of civil, hydraulic, mechanical, and mining engineering, and in many difficult situations he must depend upon his knowledge and inventive ingenuity to supplement a meager equipment. To prepare the engineering student for such experiences the apparatus in this department has been chosen with a view to giving him the greatest familiarity with the theory, construction, and use of those instruments and machines which observation has shown to be of universal adoption in practical engineering work. This apparatus embraces surveyors' and engineers' chains; standard field and pocket tapes; plain and solar compasses and transits; mining transits; engineers' levels; stadia, level, and transit rods; aneroid barometers; odometer; automatic water registers; hook gauges; three forms of current meter; stop watch; meteorological instruments; drafting instruments; mechanical calculators; blueprint apparatus; a  $4\frac{1}{4}$ -inch astronomical telescope with equatorial mountings and accessories; celestial sphere; pumps, steam gauges; indicators; planimeter and calorimeter.

Because of the situation of the Territorial university the educational work in agriculture and horticulture has taken peculiar form, being largely conducted on the correspondence plan, particularly through the "Timely hints for farmers," issued under the auspices of the experiment station, but of distinct educational value. Three thousand farmers of the Territory are reached regularly twice a month by timely publications on subjects of vital interest.

Small and well selected agricultural libraries of slight cost have been forwarded to a considerable number who have expressed a willingness to receive them.

It is believed that this method of dealing with our situation will become increasingly useful.

The equipment for agricultural instruction is good, consisting of an excellent seed collection, a greenhouse, and gardens for experimental

purposes containing many rare and interesting plants, and a well-selected agricultural library.

The assay laboratory is equipped with assay furnaces for crucible work, for scorifying and cupeling, and for retorting mercury from amalgam, besides all needed appliances for assaying by dry and wet methods, including electrolysis. The laboratory also has desks and fittings for the chemical work required in the metallurgical and mineralogical investigation and analysis of ores and mineral fertilizers, and in qualitative tests of minerals.

The mechanic arts building, provided largely through the generosity of the Copper Queen Consolidated Mining Company, has a total floor area of 7,900 square feet, divided as follows: Power room and drafting room, each 1,200 square feet; wood-working shop, forge shop, and machine shop, each 1,400 square feet; wash room, 600; model room, 400, and storeroom, 300 square feet.

Each shop provides working space for 24 students at benches or forges, and ample space for machines and tool rooms. The drafting room accommodates 36 students.

The power room contains an engine, a new 15-horsepower motor, a blower, and exhaustor.

The wood-working shop is equipped with a full assortment of hand tools, 4 wood-turning lathes, a universal wood worker, a dimension sawing machine, and other modern wood-working appliances.

The forge room contains 24 down-draft forges, 24 anvils, a blacksmith drill press, and all necessary small tools.

The machine shop contains three 14-inch engine lathes, one 24-inch engine lathe, one 16-inch shaper, one 24-inch planer, one 24-inch drill, one universal milling machine, one grinding machine, several small machines, vises, and a complete outfit of small tools.

The entire building is well lighted and ventilated, and the drafting room is heated by steam.

Room O in University Hall is used as an armory. It is fitted with the necessary gun racks and accessories. The equipment includes 150 old-style Springfield rifles, 100 Springfield cadet rifles with complete accouterments, 8 swords and belts, one 3-inch muzzle-loading rifle with carriage and complete equipment, together with necessary musical instruments and signal flags.

Herring Hall, the new gymnasium, has been fully equipped for the use of the students for the purposes of physical culture and athletics. The equipment procured from the Narragansett Machine Company of Providence, R. I., at an expense of about \$1,500, includes 96 lockers, chest weights, dumb bells, bar bells, Indian clubs, a Medart vaulting horse, parallel bars, a horizontal bar, a quarter-circle, an abdominal chair, striking bag and drum, wrestling machine, wrist machine, finger machine, chest developer, chest expander, climbing rope, flying rings, traveling rings, jump and vaulting stands, fencing foils and masks, basket ball and goals, five large mats, and a set of anthropometric apparatus. In the bathroom a heater and large reservoir provide hot water for the five shower baths.

#### AGRICULTURAL EXPERIMENT STATION.

The agricultural experiment station is a legally constituted department of the university, whose purpose is "to aid in acquiring and diffusing \* \* \* useful and practical information on subjects con-



nected with agriculture, and to promote scientific investigation and experiment respecting the principles and application of agricultural science."

With the above objects in view, the organization of the station includes the departments of administration, agriculture and horticulture, animal husbandry, botany and chemistry, the whole or a major portion of the time of one or more members of the station staff being devoted to each department of the station work. Provision is made for meteorological and entomological work also, though to a less degree.

Owing to the wide variation in agricultural conditions in Arizona, it has been found of advantage to distribute the work so that each department is located, so far as possible, in the situation most favorable to the accomplishment of its own special results. According to this principle the various lines of experiment station work have been distributed as follows:

The director's office and the departments of botany and chemistry are maintained at Tucson in the university buildings. Through this arrangement the experiment station profits by the buildings and libraries of the university, while the university is benefited from time to time by the teaching ability of members of the station staff. It has been found that from this base of operations the three great agricultural districts of the Territory—Salt River Valley, the lower Colorado, and the upper Gila—are accessible with equal convenience for field work and observations.

On the same grounds—fitness of location for the work undertaken—the experiment station farm has been maintained and strengthened at Phoenix. Salt River Valley is intermediate in elevation, in situation, and in mean yearly temperature between the other two important farming districts above mentioned, and for this reason the agricultural and horticultural results obtained there are capable of the most general application in the Territory at large.

On the same principle again, the date palm orchard is located in the alkaline district south of Tempe, where a successful demonstration of this palm as a commercial fruit producer will be of the greatest value, creating use for great areas of alkaline land in the arid Southwest.

The range station also, for the study of worn-out range country with a view to its reclamation to usefulness, is located in a typical district near Tucson, and is conducted under the auspices of the department of botany, cooperating with the United States Department of Agriculture.

The services of specialists in various subjects, such as entomology, meteorology, and soil survey work, have also been secured from time to time.

The results of the experiment station work are made public at frequent intervals in the bulletins and reports of the station. These publications are made in two series, first, the longer and more technical bulletins, stating in considerable detail the investigations as they mature, and secondly, the Timely Hints for Farmers, which are brief writings issued at the time when they will be most useful, written in plain language, and presented in popular form. The annual reports also are for the most part written popularly, and afford a convenient and reliable summary of each year's work as it comes to completion.

The experiment station work, conducted and published on the lines indicated above, has a twofold value. In the first place, the sugges-

tions made or derived from the investigations of the station are of direct material profit to the agricultural public and are intended to be immediately applied to advantage in the betterment of agricultural practice. In the second place, these writings are intended to serve an educational purpose, inasmuch as they are so presented as to constitute lesson sheets for the benefit of the careful reader. It may therefore be considered that the experiment station reaches a class of some 3,500 readers in the Southwest at frequent intervals by means of its "Timely Hints" and other publications. The operations of the range, study tract at Tucson, the experiment station farm at Phoenix, the date palm orchard at Tempe, and the sugar-beet plots on the upper Gila serve also as an object lesson to the adjacent public.

It is believed that this distributed and mobile organization is especially effective, not only for the purpose of the experiment station, but also for those of the university as well, since it allows the station to conduct its work in localities suitable for the accomplishment of results; and again, it causes the public to become better acquainted with the Territorial university, of which the station is a department.

An appropriation of \$11,000, made for the use of the station by the twenty-second legislature, very satisfactorily attests the estimation in which the work of the station is held. This appropriation is intended for the improvement of the date orchard, for purchasing live stock and buildings for the farm, and for issuing publications and holding farmers' institutes and short courses of instruction throughout the Territory.

Provision, therefore, is made for the symmetrical development of this work in the Territory, both experimentally and educationally; and, prospectively, "the farmers' college" bids fair to increase in usefulness to the growing agricultural interests of the Territory.

#### NORMAL SCHOOL OF ARIZONA AT TEMPE.

The Normal School of Arizona is located at Tempe, a city of 1,200 inhabitants, 9 miles from Phoenix, the capital of the Territory. It has railroad connections with the Southern Pacific and Santa Fe systems.

The school is located in the midst of an intelligent and moral community, engaged in farming and fruit raising. The buildings are of the latest design, provided with all the modern conveniences, well adapted to school purposes, and pleasantly situated.

The legislative enactment which established this normal school provides that instruction shall be given in the "art of teaching" and also "in all the various branches that pertain to a good, common school education;" also, "in the fundamental laws of the United States and in what regards the rights and duties of citizens." The present course of study shows that the legislative intent has been carefully observed.

The new normal school building was erected in 1894. It is a commodious structure, 136 feet long, 80 feet wide, and 3 stories high; the lower story is of brown sandstone, the other two of red, pressed brick with sandstone trimmings. This edifice is beautiful in architectural design, convenient in arrangement, and substantial in construction.

The building first used for school purposes was erected in 1886, is a one-story brick structure, 70 feet long and 60 feet wide, with a broad veranda entirely surrounding it, and a 10-foot hall extending through



it from north to south. The building has been remodeled and completely furnished and is now being used for a training school. It contains an assembly room, teachers' office, and five class rooms.

There are two dormitories situated on the campus, one for young women and one for young men.

The girls' dormitory is situated near the southwest corner of the campus, facing the street on the west, and conveniently near the school buildings. It is constructed of brick, two stories in height, and furnishes rooms for 70 young ladies. Each room is intended for the accommodation of two students, and is provided with two wardrobe closets and with city hydrant water, electric light, and furnace heat. The furnishings of each room include carpet, study table, chairs, dresser, two single beds with all necessary linen, bedding, and blankets. There are ample well-lighted hallways, two large parlors, and a comfortable sitting room. On both floors are located toilet rooms and baths with hot and cold water.

The boys' dormitory is situated on the campus east of the training school, and is a two-story brick building of pleasing design. The furnishings are similar to those of the girls' dormitory.

The normal grounds, which cover an area of 20 acres, have been beautifully laid out by an experienced landscape gardener. A fine system of graveled drives and walks bordered with grassy lawns and lined with shade trees, shrubbery, and flowering plants gives the grounds the appearance of a well-kept park. The campus includes a parade ground for military drill, a basket-ball ground, and tennis courts, and an athletic field including football ground and running track.

The school is organized in three divisions—the normal, the sub-normal, and the training. The subnormal course consists of one year, and only those are admitted to it who have done an amount of work equivalent to that taken in the first eight grades of the public schools. The normal department consists of a four years' course, one-fourth of which is devoted to strictly professional instruction. The training department is an adjunct to the normal proper and is designed to give the members of the senior class actual practice in teaching.

The endeavor of the faculty is to enforce strict discipline in all departments of the school, the aim being to secure this by an appeal to the honor of the student; but, in case of failure to secure the desired end in this way, the faculty will not hesitate to enforce prompt obedience to all rules and regulations. Those who do not conform cheerfully to all requirements are permitted to withdraw or are dismissed from the school.

The school offers to students the advantages of a conveniently arranged and well-lighted library and reading room on the first floor of the main building. The library already contains about 3,000 carefully selected volumes, covering the fields of history, science, education, general literature, and standard modern fiction. One thousand additional volumes have been ordered and will be placed upon the shelves before the opening of the next school year. There is a generous supply of encyclopedias and other general reference works. The reading room is fitted with serviceable tables, well supplied with the leading periodicals—literary, educational, and scientific—and a card catalogue greatly enhances the value of the library.

The supply of illustrative material in the museum includes a collec-

tion of fossil forms, a collection of minerals, and a beginning of a series of the native woods of Arizona. A working collection of marine forms has recently been obtained from the biological station at Woods Hole, Mass. There is a rapidly growing herbarium of native plants for comparison and illustration. Additions to the collections have been received during the past year from the following: William R. Price, J. M. Culver, Alma M. Davis, Phoenix; John M. Lindsey, Santa Barbara, Cal.; Dane Coolidge, San Francisco, Cal.; Dr. Charles H. Jones, Dr. W. G. De Vore, Miss Della Penn, Robert Finch, James Goodwin, Walter Johnston, Tempe, Ariz.

The physical and chemical laboratory is equipped with suitable tables, with water-supply and waste pipes, and lockers for individual apparatus. The outfit of chemicals, glassware, and apparatus is ample for a large class, each student being provided with the necessary apparatus for the series of experiments. The stock of physical apparatus, besides that necessary for lecture experiments and class demonstration, includes a sufficient number of duplicate sets to enable an entire division to work simultaneously at the same exercise, by this means effecting a great saving of time in the laboratory practice.

The biological laboratory is furnished with tables to accommodate a large class, and is supplied with dissecting microscopes, glassware, dissecting instruments, etc. The stock of compound microscopes is yearly being increased, and there is an equipment of apparatus for the preparation of histological material.

#### NORTHERN ARIZONA NORMAL SCHOOL.

The fifth year of the Northern Arizona Normal School opened September 8, 1903, with an increased attendance over any previous year, and the increase was entirely from outside of Coconino County. The counties of Apache, Navajo, Gila, Yavapai, Mohave, and Coconino, in Arizona, were represented, and three students from the State of Kansas were among those registered.

The board of education were compelled, at the beginning of the school year, to rent the second dormitory, and both have been filled to their utmost capacity during the entire year.

The dormitory is no longer an experiment, but a necessity so far as the success of the normal is concerned, and at the present time it seems almost certain that the third building must be rented to accommodate the prospective students who may wish to enter in September, 1904.

This condition of things simply leads to the suggestion that a substantial appropriation should be made by the legislature for a suitable dormitory near the normal building, which would greatly facilitate the handling of the students and also save the large sum paid out for rent and other incidental expenses, caused by the inappropriateness of the houses rented for dormitory purposes. The amount paid for rent alone during the past school year is over \$500.

The past year has witnessed very substantial improvements in this normal; among them the efficient hot-water heating plant, the many substantial improvements made in the chemical and physical laboratories, the six compound microscopes, the large number of volumes added to both the reference and circulating libraries, and many other improvements of a minor character, which every growing institution needs to keep pace with the advancement of an educational age.



It is also an industrial age, and this suggests that an industrial department should be added to the normal schools, if they accomplish their full mission for the public schools and homes of the Territory. To be convinced fully of this truth the incredulous need only to visit one of the industrial schools now so common in every part of the United States. All the faculties must be trained if symmetrical development results. The child of the twentieth century has a right to demand such development.

The second summer session at the Northern Arizona Normal School opened June 27 with an enrollment of 30 students. In this enrollment the counties of Apache, Navajo, Coconino, Yavapai, Mohave, Gila, Maricopa, Pinal, and Pima were represented. The States of New York, Kansas, and the Territory of New Mexico were also represented.

The enrollment for the school year ended June 30, 1904, was 16 boys and 57 girls in the normal department and about 34 in the training department.

The number of graduates on the evening of June 17 was eight, and all members of the class are now engaged to teach in the public schools of Arizona.

The Northern Arizona Normal School has graduated 28 students, and more than 80 per cent of this number are engaged as teachers in the public schools of the Territory.

The classes in Spanish and Latin have been very popular, and the enrollment in each subject has been large. The teachers from all parts of the Territory speak most enthusiastically of the wisdom on the part of the board of education in introducing Spanish, because of the help they receive in their work in being able to speak Spanish.

It is not the intention, however, to teach Spanish in the public schools, but to put the graduates in a position to do effective work for the Territory in their profession.

Regarding the teaching of Spanish in the normal, and the mission of the normal as an educational institution, President A. N. Taylor says:

I am very sure that the wisdom of the board of education commends itself to every friend of the public school system in Arizona.

The mission of the normal school is to give scholastic and professional training to those who intend to enter upon the profession. The object and methods of work of the normal school differ from the academy and college. The normal school is a professional school designed to equip intending teachers thoroughly for their work, and to afford those who are now teaching opportunities for better preparation. The essential qualifications of a teacher are cultured powers and a well-informed mind. A teacher must possess knowledge to be able to instruct others. To teach effectively what he does not know is impossible. He should know much more than he attempts to teach. He needs the culture for the power that it gives, the power to think, to originate, to influence, and control.

Thorough scholarship lies at the foundation of a teacher's course of study. A normal school should make ample provisions for the scholastic and professional training of its students.

If this be the purpose of the Territory in establishing normal schools, certainly the wisdom of the board of education of the Northern Arizona Normal School must be strongly commended for the conservative yet substantial advancement made to the end that superior scholarship and professional training may be the possession of anyone who may take advantage of the splendid equipment of the Northern Arizona Normal School.

The regular session of forty weeks will open September 13, 1904, and the promise for a large increase in attendance is such that undoubtedly the third dormitory will have to be rented.

## CHURCHES.

Arizona has many beautiful church edifices. In Phoenix, Tucson, and Prescott the churches are very large and commodious, and in many of the smaller places are to be found edifices creditable to the Christian zeal and public spirit of the citizens. The Methodist Church South in Phoenix is one of the recent structures of importance, and is perhaps one of the largest houses of worship in the Territory. The Baptist Church was completed during the year in Phoenix, capaciously built and elegantly appointed. It is a reflection of the progress made by that society in Phoenix under the guidance of Dr. Lewis Halsey. It would be impossible to mention all of the improvements made throughout the Territory, but I am glad to report that they have been extensive and substantial.

The different denominations represented in the Territory at the present time are the Roman Catholic, Church of Jesus Christ of Latter-Day Saints, Presbyterian, Methodist Episcopal, Christian (Disciple), Baptist, Congregational, Protestant Episcopal, Free Methodist, Seventh-Day Adventist, Dunkards, Salvation Army, Christian Science, River Brethren, Lutheran, Christian Reformed, Faith Mission, Gospel Union, Mennonite.

The Roman Catholic Church leads in membership, having about 30,000 members. There are 26 priests in the Territory, 40 Sunday schools are conducted, 8 parochial schools with a total attendance of about 1,500, and 29 churches.

The Church of Jesus Christ of Latter-Day Saints is very strong in Arizona. There are four stakes, the total membership being something over 7,000, this not including children under 8 years of age. The members are commonly known as "Mormons" and represent a sturdy, energetic class of citizens. Children are not baptized until they reach the age of 8 years, and until baptized they are not included as members of the church.

The Presbyterian Church comes next in point of membership, having 2,375 members. The churches are in a flourishing condition throughout the Territory, and excellent work is being done to promote Christianity and good citizenship. The Protestant Episcopal Church has a membership of 1,781, with 10 churches. The Methodist Episcopal Church has a membership of 1,161, with 21 churches. The Baptist has a membership of 686, showing a considerable increase during the year.

There are 163 churches in Arizona, and the total membership of all churches on June 30, 1904, was 44,924, many churches not having reported are not included in these figures. The total church membership in Arizona is probably over 51,000. The aggregate value of church property is about \$1,000,000. Church property throughout the Territory is not taxed.

The advancement has been very encouraging. Almost every community is now supplied with religious ordinances. The ministry is held in the highest esteem, and I am glad to report that their untiring work is bringing the results so much desired by them and all good citizens of the Territory.



## CHURCH STATISTICS.

*Roman Catholic.*—Ministers, 26; membership, about 30,000; Sunday schools, 40; schools, 8; attendance, 1,500; churches, 29. Where located: Tucson, San Xavier del Bac, Bisbee, Douglas, Naco, Benson, Wilcox, Clifton, Metcalf, Morenci, Flagstaff, Williams, Winslow, Florence, Nogales, Tombstone, Phoenix, Tempe, Wickenburg, Prescott, Congress, Jerome, St. John's, Concho, Springerville, Solomonville, Globe, Yuma, St. Michael's. Value of churches, about \$145,000; value of parsonages, about \$30,000; value of hospitals, orphan home, and other property, about \$110,000; value of school property, about \$50,000; total value of property, about \$335,000.

*Church of Jesus Christ of Latter-Day Saints.*—There are four stakes of this church in Arizona—St. Joseph, St. John's, Snowflake, and Maricopa. Ministers, 231; members, 7,004; Sunday schools, 41; attendance, 2,665; schools, 8; scholars, 803; churches in the Territory, 39. Where located: Bryce, Central, Clifton, Eden, Franklin, Graham, Hubbard, Layton, Lebanon, Mathews, Pima, St. David, Thatcher, Bisbee, San Pedro, Enterprise, Provo, Emery, St. Joseph, Woodruff, Snowflake, Taylor, Shumway, Pinedale, Showlow, Mesa, Alma, Lehi, Pine, Papago, Wards, and 8 located in St. John's stake the names of which are not reported. There are also 5 auxiliary organizations similar to Sunday schools in their scope of work, Women's Relief Society, Young Men and Women's Mutual Improvement Society, primary and religious classes. The church has property in the Territory valued at \$132,882.

*Presbyterian Church.*—Ministers, 19; members, 2,375; increase during year, 263; Sunday schools, 28; attendance, 2,587; schools, 1; scholars, 150; churches, 22; where located—Florence, Casa Grande, Gila River Reservation 5, Salt River Reservation 2, Phoenix, Bisbee, Peoria, Morenci, Flagstaff, Clifton, Solomonville, Safford, Springerville, Metcalf, Chloride, Tucson, Douglas; value of churches, \$97,300; value of parsonages, \$8,700; parochial schools, 1; value of school property, \$21,000; total value of property, \$126,000.

*Protestant Episcopal.*—Ministers, 8; members, 1,781; Sunday schools, 9; attendance, 437; churches, 10; where located—Fort Defiance, Winslow, Prescott, Phoenix, Tucson, Globe, Tombstone, Nogales, Douglas, Bisbee.

*Methodist Episcopal.*—Ministers, 20; members, 1,161; Sunday schools, 22; attendance, 1,966; churches, 21; where located—Bisbee, Douglas, Flagstaff, Glendale, Globe, Jerome, Kingman, Mesa, Needles, Phoenix, Prescott, Safford, Tempe, Tombstone, Benson, Tucson, Wilcox, Williams, Winslow, Yuma 2; value of churches, \$95,000; value of parsonages, \$21,500; value of other property, \$10,000; value of school property, \$10,000; total value of property, \$136,500.

*Baptist.*—Ministers, 16; members, 686; increase in membership during the past year, 58; Sunday schools, 12; attendance, 789; increase in attendance during past year, 56; number of churches, 15; where located—Benson, Buckeye, Douglas, Mesa, Naco, Palo Verde, Phoenix, Prescott, Safford, Shiloh, Tempe, Tucson, Upper Verde, Yuma, Salt River district; value of churches, \$3,550; value of parsonages, \$2,000; total value of property, \$5,550.

*Methodist Episcopal, South.*—Ministers, 8; members, 524; increase during the past year, 94; Sunday schools, 10; attendance, 646; Epworth

leagues, 5; members, 175; churches, 7; where located—Phoenix, Bethel, Tempe, Buckeye, Prescott, Solomonville, Nogales; value of churches, \$34,500; value of parsonages, \$5,450; value of other property, \$2,550; total value of property, \$42,500.

*Methodist Episcopal, South (Spanish-speaking branch).*—Ministers, 2; members, 91; increase during the past year, 20; Sunday schools, 3; attendance, 104; churches, 3; where located—Nogales, Phoenix, Tempe; value of churches, \$3,000; value of parsonages, \$1,500; total value of property, \$4,500.

*Christian.*—Ministers, 2; members, 300; Sunday schools, 4; attendance, 200; churches, 2; where located—Phoenix, Bisbee; value of churches, \$8,000.

*Serenth-Day Adventist.*—Ministers, 4; members, 170; increase during the past year, 30; Sabbath schools, 9; attendance, 200; schools, 2; scholars, 40; increase during the past year, 25; churches, 5; where located—Phoenix, Flagstaff, Sanches, Tucson, Nogales; value of churches, \$3,600; value of parsonages, \$200; value of other property, \$3,000; parochial schools, 2; value of school property, \$500; total value of property, \$7,300.

*Joint Lutheran Synod.*—Ministers, 2; members, 58; Sunday schools, 3; attendance, 210; schools, 2; scholars, 48; increase during the past year, 26; churches, 2; where located—Fort Apache, San Carlos; value of school and church property, \$3,500; value of parsonages, \$2,100; value of other property, \$500; parochial schools, 2; total value of property, \$6,100.

*Free Methodist.*—Ministers, 6; members, 62; increase during the past year, 10; Sunday schools, 3; attendance, 75; churches, 2; where located—Phoenix, Liberty; value of churches, \$4,300; value of parsonages, \$650; value of school property, \$4,950; total value of property, \$9,900.

*First Church of Christ, Scientist.*—Readers, 2; members, 26; increase during the past year, 4; Sunday schools, 1; attendance, 20; churches, 2; where located—Prescott, Phoenix.

*Congregational.*—Ministers, 8; members, 384; increase during the past year, 73; Sunday schools, 11; attendance, 725; churches, 6; where located—Jerome, Nogales, Prescott, Tempe, Tucson, Tombstone; value of churches, \$36,800; value of parsonages, \$3,000; total value of property, \$39,800.

#### INDIANS.

The progress made by the different Indian tribes in the Territory during the year has been most encouraging. The Indians have shown surprising thrift and energy in their work, having taken up methods of industry with success and built homes for their families. There are few hostile Indians at the present time in this Territory. Their hostility consists merely in discontent, which is not at all lasting.

Additional facilities for widening the scope of the work in hand have been given to the different agencies. While the greatest effort is embraced in the work of the Government, there are a number of missionary schools in Arizona, among them the Tucson Indian Training School, under the control of the Woman's Board of Home Missions of the Presbyterian Church. This school was opened in 1888 for the Papago and Pima, and has done a great deal of good work since that time.



The principal buildings on the campus are the girls' home, a two-story frame building; the boys' home, a group of one-story adobe buildings; and the superintendent's home. The farm is 1 mile west from the school.

The school is a home. The girls do all the housework, the cooking, and the washing and ironing, and they make and mend clothing for themselves and the boys. Opportunity to work in every department of the home is furnished during the school year. Thus, if a girl remains in school for one year only she receives a training which usually transforms her character as a housekeeper.

Most of the boys become farmers when they leave the school, and they receive practical lessons in agriculture on the farm. The board is furnishing a large pumping plant for the farm, and gardening will take an important place in the boys' training in the future.

In this school the Bible is the principal text-book. The literary course is similar to that used in the Government schools, and extends through the grammar grade of the public school. A number of pupils receive instruction in music.

#### HOPI INDIANS.

The Hopi training school is located 85 miles north of Holbrook, the nearest railroad station. The attendance during the year has been excellent, averaging 195, in spite of the scarlet fever which raged for the last six months of the year. One hundred cases occurred and only 6 deaths, some of which should not be charged to scarlet fever entirely. Agent Burton says that most Indian children are diseased in some way, and the Hopi and Navajo are no exception to the rule. Two classes have been transferred to nonreservation schools—one to Chilocco and one to Riverside.

The work of the school has been good, the beautiful new schoolhouse erected making a striking contrast to the mud shacks formerly used.

At the Polacca day school the attendance is about 45, composed mostly of small children. Every child of school age in the three villages which support this little school are either in that school or at the Hopi boarding school at Keams Canyon, 15 miles away. The people are contented to send their children to school, and there is every promise that this mesa is taking on civilization rapidly.

A large well, 10 feet in diameter, has been dug and walled up solidly with stone. This will supply the school with ample water for its needs. A good bath house and waterworks system will be put in the coming summer, which will make Polacca one of the finest schools in the Indian Service.

The Mesa day school is located 20 miles from Keams Canyon, the seat of the agency, and is the second largest school of its kind in the United States. There are three school buildings and the employees' cottage. The attendance has not been so good as in the past, dropping from something over a hundred to about 84, owing to the transfer of pupils to Keams Canyon and to nonreservation schools, and a failure to encourage and influence attendance.

The Oraibi day school is located 35 miles from Keams Canyon, and is the largest day school in the United States. The attendance has averaged over 160 for the entire year.

One new stone building was completed during the year, and the teacher, with all his other duties, with the help of the teamster, built

the walls of a large stone building 18 by 40 feet, and it only needs the roof and doors to make it a beautiful cottage for employees. A large stone schoolroom was built a year ago for this school, which gives ample room for the 170 children enrolled.

The water supply here is inadequate, water being hauled for drinking purposes 1 mile from a well in the valley. Two large wells 16 feet in diameter, one for the school and one for the Hopi, furnish water for laundry purposes, but it is not good for drinking.

The following table shows the increase in attendance at the various schools under the Keams Canyon Agency:

	Average attendance.		Increase.
	1899.	1904.	
			<i>Per cent.</i>
Hopi training school .....	83	195	135
Polacca school .....	24	45	90
Second Mesa day school .....	19	84	342
Oraibi day school .....	23	164	613
Total .....	149	488	.....
Average net increase .....			288

The tribunal known as the Indian courts has accomplished good work during the year, relieving the agent of many petty details. There have been no serious crimes or misdemeanors committed. This court deters a great deal of crime.

Two missions have been maintained by the Woman's Baptist Home Mission Society, one at Polacca and the other at the second Mesa school. Considerable progress has been made toward the conversion of the Indians, especially at Polacca.

The Mennonite Mission Board maintains a mission at Oraibi under charge of Rev. J. B. Frey. A commodious mission chapel has been erected, where services are regularly held.

Three trading posts are kept on the reservation by white men. All have done a good business and the Indians have been treated fairly. Several young Indians have started trading posts themselves and are doing fairly well. This places them in an independent sphere and causes them to depend more and more upon their own efforts to get along. It is also the most powerful factor toward civilization.

The field matrons have done a great deal of good. At the Polacca, Miss Sarah E. Abbott's work shows for itself, in the clean homes and yards and the higher life of the people. At Oraibi, Miss Milona M. Kieth is striving against almost despairing odds to elevate the people and encourage clean homes and better living. At this village, however, 1,000 people are huddled together in a small place. A great part of them are so-called hostiles, and it is slow work getting them to change their customs of a thousand years. Little by little her faithful work is telling.

The earnings of the Indians during the year were as follows:

Sale of wood .....	\$1, 080
Sale of coal .....	600
Sale of beef .....	2, 000
Irregular labor .....	2, 700
Freighting .....	2, 525
Total .....	8, 905

To this should be added moneys earned by freighting for traders, sale of baskets, plaques, blankets, which will amount up into the thousands.

The scarlet fever at the Hopi school also swept through the Hopi villages, and owing to the filthy homes and little care shown the sick, many children died. Every effort was made by the physician but as he had nearly 100 cases in the Hopi school he had his hands full without the villages. The field matrons did what they could to alleviate the condition.

Better and cleaner homes are in evidence; better and more civilized clothing is worn; larger houses with good doors and glass windows are being built by the Indians with their own money and labor; the medicine man is disappearing; and the dances are decreasing. Several young Indians will vote this coming election, being able to fulfill every requirement of the law. They can read and speak well the English language; they can hold their own in commercial pursuits, and they can make a good living for themselves and their families.

Mr. Charles E. Burton is the superintendent in charge of the Hopi Agency, with headquarters at Keams Canyon.

#### PIMA INDIANS.

The Pima Agency is located at Sacaton, 16 miles north of Casa Grande, a station on the Southern Pacific Railroad. Casa Grande is the railway and telegraph station and is connected with Sacaton by a daily stage, carrying the mail every day except Sunday.

The jurisdiction of this agency extends over three distinct reservations: Gila River, Salt River, and Gila Bend, peopled by three tribes, Pima, Maricopa, and Papago. The population is as follows:

Gila River Reservation .....	3, 860
Salt River and Lehi Reservation.....	650
Gila Bend Reservation.....	154
Nomadic Papago (about) .....	1, 850
Total .....	6, 514

The progress of the Pima on the Gila River Reservation during the past year has been steady in spite of the long continued drought. No rain has fallen for more than a year, consequently they were cut off from agricultural pursuits but found employment in various ways. The men worked on the railroad, on farms, and in the adjacent towns. The building of the Tonto reservoir afforded work for many. The women do laundry work, cook, raise chickens, make baskets, and in many ways keep the wolf from the door. Ninety-five per cent are self-supporting, while 5 per cent receive rations. Among the latter are the sick and aged. There has been no starvation on this reservation as the Indian Office provides for the destitute. The pumping plant installed at Sacaton has proven a wonderful success, and if similar plants are established on the reservation the Indians will be independent.

There is a noticeable improvement in their dress, manner of living, and desire for articles of furniture. Packing boxes are collected and utilized, homemade chairs, tables, beds, etc., are seen everywhere. The parents recognize the value of education, and all healthy children of school age are in school. Nearly all of these Indians belong to the church. When the bell rings on Sunday afternoon, no matter how warm the weather, large numbers of clean, orderly men, women, and



children troop by to church and can be heard singing hymns during the afternoon hours.

The boarding school at Sacaton is in a flourishing condition. The capacity of the school is 250, but during the spring and fall, when it is necessary to sleep out of doors, 281 are accommodated.

Commissioner Jones, on a recent trip to Sacaton, said, "the Sacaton farm is the best and cost the least of any farm in the Indian Service."

The pumping plant was completed in January and consists of five drilled wells connected with each other; the water is raised from them by one large pump. Inspector Code and Mr. F. H. Newell, of the Geological Survey, visited the plant when it had been in operation about four months, and were more than pleased. The important thing demonstrated both by this and other plants is that there is an immense underflow both in the Sacaton and Salt River valleys, and that it seems to suffer no diminution from the constant drain upon it of these large plants. It is therefore the most encouraging feature in the project to build many similar plants for raising the underground flow by power to be generated at the dam site.

The Sacaton plant now furnishes water approximately for 300 acres of land, and 200 more will be brought under the same plant, making in all 500 acres watered by this plant, the initial cost of which was about \$15,000. The running expense of this plant is from \$1.50 to \$1.75 per acre-foot of water raised. Four acre-feet is a liberal annual supply for irrigation purposes, making the water cost from \$6 to \$7 per acre per annum. Seven tons of alfalfa to the acre will be raised every year. The quality of the water is shown by analysis to be vastly superior to that in the Gila River. The plant has been running fourteen hours a day for six months, and the supply is not diminished in this the driest season known in Arizona for years.

Through this plant many acres of worthless desert lands have been converted into a farm of which we are justly proud. It is truly a wonderful sight. Thirty miles out on the hot sun-baked desert, field after field of alfalfa, sorghum, wheat, young fruit trees, vegetables, melons, etc., meet the eye. In February the first plowing was done and water applied to land that had not been wet for years, except by occasional showers. To-day the Indians there have raised food enough for school and agency stock for the next fiscal year, and \$1,000 worth of hay has been sold. Heretofore \$1,000 has been expended for hay. The garden has furnished vegetables for the children's table, and the cold storage is full of melons. The fine well-fed cattle are the best to be found in the country, while the pigs would take a prize in any Eastern State.

This fine farm is a model for the older Indians and furnishes valuable training for the boys. We are handicapped in the fact that this being a reservation school the boys are too young to handle the work. The capacity of the school should be increased to 350, to include boys over 16 years of age to receive the benefit of this most valuable industry, for there is no other place in the Southwest that can give them the same advantages. The Pima can not live in the colder climates, therefore he should be given a chance for a livelihood in his own country, where he will have health and strength. To colonize the Indians, giving each individual a certain number of acres under a pumping plant, seems to me an excellent scheme and the only way to help them to an independent mode of life, as they are naturally an agricultural tribe and require an outdoor life.

The boys also receive good training in carpentry, blacksmithing, harness making, etc. Right here I wish to say that boys who go to the large training schools, should be taught trades useful to them in their homes. There are large numbers of returned students on this reservation who are tanners, shoemakers, bakers, and machinists, but in looking for an assistant farmer but few could be found who could milk a cow. When application is made for a boy to work out, nearly always "one who can milk" is desired. The Pima is a born farmer; he will never be a machinist or a tinner.

The girls are taught cooking, sewing, laundrying, housekeeping, basketry, lace making—all that pertains to good housewifery and clean homes.

The literary department did excellent work, gaining ground lost in preceding years. The kindergarten class is a pleasing feature of the model school in the St. Louis Exposition.

Six-day schools have done well, and the beneficial results are apparent in their vicinity. Five hundred children have been sent to non-reservation schools, chiefly to Phoenix.

St. John's mission school at Gila Crossing, in charge of the Franciscan Fathers, reports no sickness, good conduct, and a large attendance during the year.

The Indian court, composed of three honest, intelligent Pima, are of great help in arriving at a just decision, as they understand the language and do not have to depend upon the truthfulness of the interpreter.

The police, all full bloods, can be relied upon to carry out instructions, interpret, and keep order on the reservation.

The Indians on the Salt River Reservation have a little water, but not nearly enough for their lands. They manage to make a living, receiving no rations at all.

The additional farmers are of great help to the agent in looking after affairs in remote parts of the reservation. They compel the Indians to use every drop of irrigation water, to plow properly, and keep their farms in good condition. They become personally acquainted with the sick and infirm, and can not be imposed upon for rations. Through them the agent can arrive at a more accurate census, and their services are valuable in accompanying and looking after the interests of large numbers of Indians working at a distance from the reservation.

The outing matron reports as follows:

When I took charge of my position it was considered to be a much needed one by all who had the interests of the Indian youth at heart.

They hired out in families where they were allowed to be out at any hour of the night they chose. After having oversight of them during the last year and a half I have but very little fault to find with the reservation working girls; but few changes of place have been made without first consulting me. The boys have been a little more troublesome, but are filling good positions very satisfactorily. Any Indian can find work in the Salt River Valley if he understands English. Both sexes make good help in the house and on the farm. The girls are natural nurses and are fond of children. The boys are handy with horses and barn work. I have a good boy who earns \$14 a week the year round in a tailor shop. The wages of a girl is from \$8 to \$23 a month. The boys range from \$10 to \$56 per month. The demand for help is far in excess of the supply. I thoroughly enjoy my work and feel that much good has been accomplished.

Mr. J. B. Alexander is the superintendent of the Pima Agency, with headquarters at Sacaton.



## NAVAJO INDIANS.

The Navajo Agency is located at Fort Defiance, Ariz., 30 miles northwest of Gallup, N. Mex., which is the railroad and telegraphic station, and which is now connected with the agency by a telephone line. This agency comprises the south half of the Navajo Reservation, and something like 12,000 Indians are located there.

The Navajo is a superior Indian, an energetic worker, and is generally peaceable and quiet, and is making some progress. Their reservation is a very large area of barren country, fit only for grazing, with the exception of small areas in various places where the land can be irrigated. Such places are made use of for farming, while the flocks of sheep and herds of cattle graze on the other territory, and some of the herds are kept off the reservation.

The Navajo are employed at all places in this country where labor is desired. They receive employment in the beet fields, at various mines and on the railroad, and generally are given the preference over other Indians and the Mexicans. At the present time quite a number of the Navajo are employed at the Zuñi Reservation on the improvements the Government is installing there. The agent encourages the Indians to leave the reservation and find employment where they can, and they seem willing to go most any place to secure work. The Government has paid the Indians for labor, beef, mutton, hay, and freighting during the year as follows:

Irregular labor .....	\$2, 383. 56
Beef and mutton .....	5, 843. 24
Hay .....	293. 90
Telephone poles .....	1, 222. 25
Wood .....	1, 480. 00
Hauling coal .....	1, 565. 85
Freighting .....	3, 779. 64
Total .....	16, 568. 94

The greatest source of income the Navajo has is from his sheep, goats, and sale of the Navajo blanket. In the neighborhood of \$500,000 are obtained from these industries. The Navajo blanket has become well known and is in demand everywhere.

During the year an adobe cottage and frame barn were erected at Chin Lee, the former at an expense of \$866 and the latter by agency employees at no expense to the Government; a stone cottage at an expense of \$2,556 was erected at the agency; and a telephone line at an expense of about \$2,700 built between the agency and Gallup; the roads in the vicinity of the agency and Little Water school have been improved and other minor improvements made at the agency. The agency sawmill has been put in working condition and has sawed first-class lumber—221,000 feet during the year. The labor in making these improvements has been performed largely by the Indians. A number of the Indians are excellent stone masons, some do good adobe work and some are learning to do carpenter work.

The Little Water school, under the supervision of Mrs. Emma De Vore, has done good work. The attendance has been large and could have been larger had the capacity and conveniences permitted. This school is located 35 miles northeast of the agency and the plant consists of one stone and three adobe buildings, one of the adobe build-



ings containing dining room, kitchen, sewing room, one schoolroom, and employees' rooms, having been completed during the year. By the addition of this building the capacity of the school was increased from 80 to 125. A new barn is in course of construction, a new laundry building was being erected, but on June 17 a gasoline explosion occurred in the pump house and the result was the destruction by fire of the new laundry, old laundry, and pump house buildings. The school needs more buildings, a good water system, and improvements in the sewer system.

The Navajo school is located at the agency and has a capacity of about 180, but during the year the enrollment has been 280, with an average attendance of 211. Good progress has been made in all the departments of this school, considering the fact that a large majority of the pupils at the beginning of the year could not speak English. A number of the boys were given instruction in blacksmithing, wagon work and carpentry, shoemaking, gardening, fence building, and engineering, under the direction of agency and school employees; while the girls received training in cooking, housework, sewing, weaving, etc., under the supervision of the matrons, cooks, laundress, seamstress, and weaver.

During the year the garden has been enlarged by building a new road and setting the fences out to include some good land through which the old road ran; a number of old, unsightly buildings have been torn down and removed; the grounds have been inclosed by woven-wire fencing, thus throwing the traffic back of the buildings instead of across the school grounds; steam machinery has been installed in the laundry; two respectable looking coal houses built; grounds improved and beautified; 1,400 feet of plank sidewalk built, and other minor improvements made.

The dining-room building should be enlarged so the capacity would be 250 instead of 140. By this improvement needed dining room and kitchen for pupils and mess room for employees would be provided. A school building containing five class rooms and assembly hall, a hospital building, a barn, and a girls' dormitory building should be erected. A complete sewer system, a heating plant, and an electric-light plant should be installed, land for farming obtained and land for grazing purposes inclosed by fence. The agency barn should be converted into shops for blacksmith and wheelwright, and the agency shop into carpenter and shoe shops for school. Estimates for most of these improvements have been filed with the Department, and favorable action will probably be taken on part or all of the matters in the near future.

At St. Michaels, 8 miles southwest of the agency, is located a school under the supervision of the Catholic Sisters. They have a very nice plant, take care of about 80 Navajo pupils, and have done excellent work.

As an indication that the Navajo is becoming more favorably impressed with the benefit of education, 98 pupils have been transferred from the two schools and direct from the reservation to non-reservation schools, and from 150 to 200 pupils have been placed in the Albuquerque school by the Navajo residing off the reservation.

The health of the Navajo has been usually good this year, no serious epidemics having visited them. Tuberculosis in its varied forms is the prevailing disease and is due to heredity; they are bothered more or

less with rheumatism, and diseases of the eye due to the sand-laden winds and to the fact that in heating their hogans as they do their eyes are injured by the smoke. These troubles will become less as they improve their way of living, which improvements depend largely on the example of the returned pupil.

The sanitary condition of the school has been much improved during the year, and with the further improvements planned can be made nearly perfect.

Rev. C. H. Bierkemper, of the Presbyterian denomination, is located at Ganado, 35 miles west of the agency. Rev. Mr. Bierkemper, in addition to conducting a day school part of the year, has assisted the Indians in improving their roads, developing water for themselves and their stock, and in other ways. He has considerable influence with the Indians and is doing excellent work.

Rev. R. B. Wright, of the Baptist faith, has charge of the mission work at Two Grey Hills, about 45 miles north of the agency, while Rev. H. J. Freijling and Rev. Mr. Brink, of the Dutch Reformed Church, are located, respectively, at the Navajo and Little Water schools.

Mrs. Henrietta G. Cole, field matron, is located at Chin Lee, about 50 miles northwest of the agency. Mrs. Cole is doing excellent work.

An irrigation engineer has been employed to make plans and estimates for various irrigating projects on the reservation, and it is hoped that a portion at least of these proposed improvements will be made during the current year. The employment furnished the Indians by such work would be of great immediate benefit to them and the improvements made would provide permanent homes for a large number.

Mr. Reuben Perry is the superintendent and special disbursing agent of the Government, from whom the information given in the foregoing statement was obtained.

#### MOHAVE AND CHEMEHUEVI INDIANS.

The Colorado River Reservation, the home of 650 Mohave, extends for 60 miles along the Colorado River and contains about 240,000 acres. A portion is subject to the annual overflow of the Colorado River, but the larger part requires irrigation to raise a crop. The soil is as fertile as any in Arizona, and crops will grow the year around. All fruit trees indigenous to southern California thrive here.

Wheat is the most successful crop of the Mohave, but barley and corn do well. The vegetables usually grown are beans, melons, and pumpkins. A centrifugal pump recently installed irrigates about 500 acres.

The Government irrigation works, projected to begin at Needles and extend down the river, will be of great benefit to the Mohave Indians. Nearly the entire valley traversing their reservation can be irrigated at small expense throughout the year with the supply of water furnished by means of dams in the river. It is estimated that the lands susceptible of irrigation in the Colorado River Reservation would, under cultivation, yield sufficient products to support all the Indians in the Territory of Arizona.

The Fort Mohave Indian School is maintained by the Government at old Fort Mohave. There is a small reservation there which has been



occupied by the Mohave and Chemehuevi Indians for generations. There are but a small number of the latter tribe left.

While many of the Mohave Indians still wear long hair and a few still paint their faces, they have made very rapid progress in civilization during the past fifteen years. This progress is due very largely to the influence of the Fort Mohave Indian School. The young people nearly all speak the English language, the middle-aged understand English fairly well, and the aged are rapidly passing away. They nearly all wear citizen's clothing and are becoming enlightened upon most of the vital questions pertaining to the progress of mankind. They are fairly industrious and furnish a large part of the labor essential to the progress and enterprises of this section of the country. The mortality rate seems to be quite high, and without a doubt the Mohaves are decreasing in numbers. An accurate record has not been kept in the past, but in the future the school proposes to keep accurate statistics.

The Fort Mohave Indian School, of which Duncan D. McArthur is superintendent, is the pride of the Mohave tribe and a credit to the Government. In it the Mohave children are trained in the white man's better ways. Those completing the course go out to become leaders among their people, disseminating the information the tribe requires in its advancement toward citizenship. While, from lack of means and the retarding influences of tribal manners and customs, these young people must accommodate themselves to the necessities of their environment, yet to a great extent they are raising the moral and intellectual status of their people and engaging with great credit to themselves in the various avenues of industrial work that afford them employment. A number of Mohave Indian girls from the school are constantly employed for brief periods of time in good homes in Los Angeles, Cal. They are very much desired as helpers in such homes, and the training they thus receive will undoubtedly prove to be a potent factor in the improvement of the Mohave Indian homes when these girls eventually become wives and mothers.

During the past fiscal year the Fort Mohave school plant has been enlarged and improved. The older buildings have been thoroughly renovated and put in excellent condition. A fine new brick school building and assembly hall and a new dining room and kitchen have been erected. Invitations for proposals for the erection of a new brick hospital are now being circulated.

The present enrollment of the school is 223. The average attendance during the fiscal year 1904 was 210.

An irrigation ditch was constructed across the school reserve during the past year for the purpose of irrigating lands farther down in this valley. The ditch is not yet in first-class condition, but if properly managed and dredged as sediment settles in it there is good reason to believe that it will prove to be a success, in which case there will undoubtedly spring up in this part of Arizona one of the most thrifty agricultural communities in the Territory, for the soil here is fertile, there is a large area of land that can be irrigated, and water for irrigation is abundant. The school anticipates the irrigation of 1,000 acres by means of laterals from the above-mentioned canal.

If the proposed irrigation works are established by the Government at Bulls Head, the lands of the Fort Mohave School Reserve will be



very valuable and this school will be placed upon a self-supporting basis and will undoubtedly become one of the leading Indian schools of the country.

SAN CARLOS AGENCY.

The San Carlos Reservation embraces about 2,800 square miles and is bounded on the north by Salt River, which separates it from the Fort Apache Indian Reservation.

The Indians residing on the reservation are divided as follows: Tontos, 667; Coyoteros, 489; Mohave, 55; San Carlos, 1,066; total, 2,275, of which 90 are ex-students of nonreservation schools and 592 are of school age. These Indians since the Government has stopped the issue of rations have taken readily to work, and during the past year have been engaged in building roads, irrigation ditches, improving their farms on the reservation, and working in the mines and on railroads off the reservation. They have conducted themselves in an orderly manner, the few disturbances that have arisen from time to time being caused by the desire of the Indians for liquor and the supply of the same by degenerate whites.

The San Carlos boarding school has an attendance of 100. Rice bonded school has an average attendance of 209. The Lutheran mission school has 20 pupils.

Among the improvements of the year is an excellent wagon road, which has been built from San Carlos to Fort Apache.

Indians' farms have produced during the year the following crops: Wheat, 3,312 bushels; barley, 4,784 bushels; corn, 1,957 bushels; cabbage, 64 bushels; pumpkins, 847 bushels; melons, 1,000 bushels. On account of the drought the hay yield was light.

The Apaches have few cattle. During the past year 18,260 head have been pastured on the reservation at \$1 per head, the Indians receiving the benefit.

Mr. Luther S. Kelly is the Indian agent in charge at San Carlos, having recently taken charge of this important post.

APACHE INDIANS AT FORT APACHE INDIAN AGENCY.

The White Mountain Apaches are under the supervision of this agency, which is located on the White Mountain Reservation, in north-eastern Arizona.

On account of the unusual drought it has been a hard year for the Indians of this agency. They usually sell wild mountain hay, from which they realize about \$20,000 annually; but during an ordinary year they could sell \$50,000 worth of this hay if they had a market for it. This year the Indians received no more than \$10,000 for their hay. However, they have sold 2,000 cords of wood to the military at Fort Apache, for which they were paid \$6,000.

These Apaches are good laborers when wisely directed, but it is difficult to get them to leave the reservation to work anywhere. They cling tenaciously to the mountains as their own home.

Of the 400 head of cattle bought for them with their grazing permit money the percentage of loss is less than among the cattle of the white permittees about them. It was predicted by the pessimistic that these Indians would soon kill their cattle, but such is not the case. They

have done as well as white people would have done under the same circumstances. It is true that they are careless, thoughtless, and wasteful, but their education and condition have made them so. They are very superstitious and have great faith in the "medicine man." The Indian medicine men are a menace to civilization and to the schools. The agent states that they should be sent to another reservation where they would have no influence. The bonded officer at the agency could be empowered to remove any Indian who persists in misleading his people in these so-called medicine practices. It is hard to govern Indians as long as they have such faith in these frauds. Even the Indian police are afraid to arrest them, fearing that the medicine man will cause some demon to take hold of them.

The agent has granted grazing permits to owners of cattle and horses to the extent of about 6,000 head, and this limited grazing has in no perceivable way affected the mountain vegetation. Stockmen know that the grazing is much better on the reservation than off of it, hence twice as many applications for grazing permits are received as are granted. Some of the stockmen have suffered the loss of quite a large number of cattle from slaughter by Indians. The Chiricahua Cattle Company estimate that they have lost \$1,500 worth of cattle this year from Indian depredations. Hence it will be readily seen that there is much room for improvement in the morals of these Indians.

About 90 per cent of the number of males wear citizen's clothing, consisting of overalls, shirt, and hat; the female population wear flashy colored dresses made in their own peculiar style. They like sharp contrasts in the colors of their dresses; the older women are usually very dirty and their dresses are scanty and poor.

With rare exception the Indian women are opposed to the school and civilization, and the children hear nothing in the camp but opposition to the schools. The men are not so much opposed, at least they do not manifest it so plainly. The Indian boys are much brighter and more easily taught than the girls.

According to the last census there were 551 Indian children of school age, and of this number about 220 are attending school. The agency has a fine electric-light system, a splendid water and sewer system. The Department has begun the construction of suitable stone buildings for the schools. At least three more buildings of this kind should be erected during the ensuing year for the training of Apache children.

Fort Apache has a splendid commanding officer in Major Bishop, who is cooperating with Agent C. W. Crouse in many ways that are helpful to this tribe.

#### PHOENIX INDIAN SCHOOL.

The Phoenix Indian industrial school, of which C. W. Goodman is superintendent, was established and a superintendent appointed in January, 1891. The school was opened in the West End Hotel the following September, with 31 boys. The number was soon increased to 42 boys, which taxed the capacity of the building. Mr. Hugh Patton, a Pima Indian, now the day school teacher at Gila Crossing, was the first teacher. May 6, 1892, the school was transferred to its permanent quarters on the 160 acres of land 3 miles north of Phoenix. This quarter section was valued at \$9,000, of which the Government paid \$6,000 and the citizens of Phoenix donated \$3,000.

Since then the school has grown until there are now 30 buildings for the pupils and employees. The extensive grounds are well cared for and quite ornamental, and the school is quite a resort for Phoenix people and their friends.

The total number of pupils enrolled during the year was 872, with an average attendance of 716. About twenty different tribes of Indians are represented at the school, among which may be mentioned the Pima, Maricopa, Papago, Apache, Navaho, Hopi, Yuma, Mohave, Pueblo, Mission, Klamath, and Hupa, the greater number of pupils coming, of course, from the reservations of Arizona.

Special attention has been paid to the industrial training of the pupils. Under trained instructors the boys are taught carpentry, wagonmaking, farming, gardening, dairying, painting, shoe and harness making, engineering, tailoring, baking, and other useful occupations. The girls are instructed in cooking, sewing, laundering, nursing, and general housekeeping.

An industrial cottage, in charge of one of the matrons, has been set aside for the purpose of instructing girls in general household duties. About six or eight girls of various ages are detailed here for a certain length of time, and they are taught such work as is required in the average home and such a manner of living as the Indian pupils, with proper energy and ambition, may reasonably hope to attain. In connection with the regular housekeeping they have the care of a cow and some poultry.

All the pupils receive instruction in the class room one half day and the other half is devoted to industrial training. Both the boys and the girls receive military drill, and the boys especially are given careful instruction in military tactics as per the Manual of Arms used in the United States Army.

Among the improvements of the school during the year may be mentioned the erection and completion of a new hospital, addition to the boys' dormitory, a fine dining hall and kitchen, a new dairy barn with all modern conveniences, the laying of 660 square yards of concrete sidewalks, the installation of a new ice plant with a capacity of 4 tons of ice per day, the drilling of two wells on the school farm, which supplement the supply of water from the irrigating canals, besides many improvements to the buildings and grounds in general.

A creditable exhibition of some of the work done at this school was sent to the World's Fair at St. Louis this summer, and may be seen in the Arizona exhibit in the Educational Building. This exhibit includes a beautifully hand-carved oak library desk, different types of horse-shoes, a carved picture frame, rugs, and some excellent pieces of embroidery and fancy work, as well as a fine exhibit of class-room work and numerous photographs of the school.

The health of the pupils has been good, and as a class they have been happy and contented.

Four boys and four girls, representing seven different tribes of Indians, completed the grammar school course in June. Several of these expect to go to Hampton Institute to complete their educations.

Our Indian school band, which received many complimentary press notices in regard to the gentlemanly conduct of the boys and the high class of music rendered on their tour of Arizona and California last summer, is receiving still greater recognition this summer. The band has been in California for about two months this summer, and every-



where it has given entire satisfaction and won the admiration of those who have heard it.

Through the efforts of Hon. Frank Mead, supervisor of Indian reservations, the old military post at Camp McDowell has been converted into headquarters for a farmer and day school teacher. The improvements near this post have been purchased by the Government of the white settlers, and the land has been apportioned to deserving Mohave-Apache Indians, who have been supplied by the Government with a few plows and farming implements in order that they may cultivate their lands.

There are now living on this reservation 191 Apache Indians. The number of acres of land cultivated by these people during the year was 256. The produce raised during the season is estimated as follows:

Wheat.....	bushels..	23
Corn.....	do.....	607
Potatoes.....	do.....	17
Hay.....	tons..	36

A large number of watermelons and muskmelons.

This is evidently only a fraction of what is needed for their support, but the Indians are earnestly trying to profit by the generosity of the Government and are encouraged to greater efforts for self-support in the future.

Women of this tribe are noted for their fine work in basketry, and during the year sold above \$2,000 worth of baskets. A day school was established in January. The average attendance for the last month in the school year was 18. The Camp McDowell Indian Reservation has been attached to this school for purposes of administration.

At the present time the entire farm consists of 240 acres, a quarter section lying under the Grand Canal. A tract of 80 acres, 1 mile east of the school, is the new farm, which carries a water right in the Arizona Canal, although 10 acres of it lie under the Grand Canal also. Here the soil is adapted to gardening. Vegetables and melons are cultivated with a fair measure of success.

Eggs, milk, and hay were the farm products of the year. Recently special attention has been given to poultry.

Health and deportment of an Indian school require eternal vigilance. Happily the first is in excellent condition, no epidemic having invaded the premises. While occasional misdemeanors are discovered and punished, unremitting care has resulted in much-improved conduct.

The Indian school band, which is regarded as the best in the service, has recently made a tour of Arizona and California, everywhere receiving complimentary press notices upon their gentlemanly appearance and conduct and upon the style and class of music rendered.

#### SAN XAVIER RESERVATION.

This Reservation embraces an area of 105 square miles in Pima County. The chief occupation of the Indians is agriculture, in which they are making steady progress, although they have experienced many drawbacks. They are industrious and economical, spending the money received from their crops on improved machinery and in building new homes. The agency is at San Xavier.

## COUNTIES.

On February 24, 1863, the Territory of Arizona was set aside from New Mexico and became an organized political division. The first legislature met a year later and organized the Territory into four political divisions, forming the counties of Yavapai, Mohave, Yuma, and Pima. The population at that time was about 8,000. The Territory was unexplored, inhabited by hostile Indians. The nomenclature of the counties shows the location at that time of the different tribes, the legislature readily accepting the Indian names as the most appropriate designations of the separate divisions. Later on this same spirit controlled in the naming of Apache, Navajo, Maricopa, Pinal, Coconino, and Cochise. Santa Cruz and Gila got their names from rivers, and Graham indirectly from a gallant army officer by that name who commanded United States troops in the early days. This name was originally given to the range of mountains traversing the central part of the county, and when the county was formed it was handed down as the proper name for it to bear.

Yuma County has retained its original boundary from the time of its formation in 1863, and it is the only county in the Territory that has done so. Mohave County has been least molested of all the other counties, having given over a portion of its area to what was known as Pah Ute, a county created by the legislature of 1865. Utah, however, by an act of Congress, established its southern boundary to include the principal settlements of the new county along the Muddy River, and in 1871 the law creating this county was repealed, and Mohave County was left with 13,421 square miles, the second largest subdivision in the Territory.

From Yavapai and Pima nine counties were formed. Apache, Coconino, Maricopa, and Navajo sprang directly and indirectly from Yavapai, and Cochise, Pinal, Gila, Santa Cruz, and a large part of Graham, from Pima. The northern part of Graham was formed from a part of Apache County, which was originally Yavapai County's territory; hence Graham must be credited to both Yavapai and Pima.

The last encroachment on Pima County was in 1898, when Santa Cruz County was formed from its southeastern portion. The new county is the smallest in the Territory, having an area of 1,212 square miles; yet it is equal to the State of Rhode Island in size.

In 1871 Maricopa County was organized, and Pinal County was also created that year; Maricopa having been sliced from Yavapai and Pinal from Pima, the area in square miles of the former being 9,354 and of the latter 5,210. In 1881 Graham, Gila, and Cochise were created, Apache having come into existence three years prior to the advent of the three counties mentioned. In 1895 Navajo County was formed from the western portion of Apache County, with an area of 9,826 square miles.

The mining counties are Cochise, Graham, Yavapai, Yuma, Pima, Pinal, Santa Cruz, Mohave, Gila, and Maricopa. There are some mining districts in Coconino County, but Navajo and Apache do not claim prominence from this source. They are chiefly stock-raising and agricultural counties.

## APACHE COUNTY.

This is one of the largest counties in the Territory, having an area of 12,000 square miles.

The Navajo Indian Reservation takes up about 5,000 square miles of the northern part, while the Apache Indian Reservation takes up about 500 square miles of the southern part. The Black Mesa Forest Reserve, which borders on the last-mentioned reservation, takes up most of the valuable forests as well as a great part of the best grazing land. Between the reservations the settlements are located, inhabited by a progressive, law-abiding, industrious people, gathered together from all quarters of the globe. The population of Apache County is between 9,000 and 10,000. St. Johns, the county seat, is the largest of the towns, with a population of about 1,200. Following in point of population are Concho, Springerville, Eagar, St. Michaels, Nutrioso, Alpine, Greer, Navajo, Adamana, Allantown, Houck, Ganado, and a few smaller settlements, supported by agriculture or stock raising.

A major part of the petrified forest lies within the borders of the county, and everywhere can be seen evidences of a prehistoric civilization. The pueblo ruins, cliff dwellings, and irrigation systems show that at some remote time this county was thickly populated.

The taxable property will reach this year the \$1,000,000 mark.

The financial affairs are in a healthy condition, the county having greatly diminished its bonded indebtedness, and is now running on a cash basis. Its liabilities are: Seven per cent bonds, \$14,000; Territorial 5 per cent bonds, \$43,439; total, \$57,439. Its assets are: Cash on hand, \$17,069.44; court-house and grounds, jail, safes, and furniture at St. Johns, \$15,500; jail at Concho, \$500; bridges and other property, \$1,500; total, \$34,569.44.

There are two reservoirs in the county, owned by private capital, with a total irrigation capacity of 35,000 acres. The droughts have seriously interfered with farming, as well as considerably damaging the stock industry. The stock industry of the county represents fully \$350,000 of its taxable property.

The county supports 23 public schools, with an attendance of 890 pupils out of a census population of 955 of school age. The valuation of school property, which is exempt from taxation, is \$12,434.

At St. Michaels the Franciscan fathers, under the patronage of Mrs. Catherine Drexel, are conducting a very successful school in the upbuilding of the Navaho.

The county has two weekly newspapers—the Snips-Herald, printed in English, and the Apachito, a Spanish publication.

The mining industry, aside from a small amount of gypsum mined for local use, has never been awakened into life. Prospecting of late has manifested that there are deposits of coal, gilsonite, silver, copper, and gold awaiting development.

## COCHISE COUNTY.

Mining has given this county prominence throughout the United States, some of the largest producing copper and gold mines being located there. The mineral production is perhaps as large as any county in the Territory. Bisbee is the center of the mining activity which extends to all parts of the county. Douglas during the past



year has become the home of copper smelting in this county, the smelters of Phelps, Dodge & Company having been erected there for the reduction of all copper ores produced by their mines. Customs work is also done, lending an impetus to individual efforts throughout the southern portion of the Territory and northern Sonora, Mexico.

The population of Cochise County has greatly increased during the year, the gain being the greatest of any county in the Territory. Bisbee and Douglas have expanded during the year, and several new mining camps have shown increases in population. Tombstone, once the largest mining camp in the Southwest, is again taking an important place as a point of activity and development. Pearce, Willcox, Gleeson, Black Diamond, Benson, Fairbank, and many other towns, have also shown progress.

The Mormon settlers of the San Pedro Valley carry on extensive farming, and with their great energy and push have succeeded in making some substantial farms, which yearly give them profitable returns. A large number of wells have been sunk upon these ranches at St. David and other places south of Benson, and water thus obtained for irrigation is spread over large areas of fertile bottom lands. Benson, Fairbank, Tombstone, and other points, provide markets for the products, and great quantities of hay and grain are shipped to the larger markets. In the San Simon Valley artesian water was developed first in 1882, and a number of wells are successfully operated for supplying water for irrigation. The San Simon River also supplies some small ranches with water for farming. Some irrigation is carried on in the Sulphur Springs Valley by using water from the White River. Near Fort Huachuca ranchers take water from Babocomari Creek and from springs in the Huachuca Mountains and use it for small farming and domestic use. The St. David and Union ditches in the San Pedro Valley are the chief sources of extensive irrigation in the county.

Cochise County is one of the principal stockraising counties of Arizona. Great areas of fine ranges provide feed for stock throughout the more favorable years, and thousands of cattle and horses roam the ranges of this county. Cattle raising is carried on extensively by individuals and large corporations, and there are some of the largest ranches to be found in this county of any section of Arizona. It is regarded as one of the most favorable portions of Arizona for stock, and the industry is in a prosperous condition considering the extent of the drought of the past few years.

#### COCONINO COUNTY.

Reports do not indicate that there has been any material increase in the population of this county during the past year, owing to the fact that many stockmen and others have left the county and there is scarcely any land upon which settlement can be made, all available lands being held in reserve by the Government.

There is but little irrigation carried on owing to the scarcity of water. No extensive development of water has been attempted. There are at the present time no more than 15 ranches in the county.

At Lees Ferry water is obtained from springs in the Parish Canyon. The supply is more than sufficient for the small area under cultivation, and the crops irrigated are alfalfa, grapes, apples, and peaches. The

Indians at Supai obtain water from Cataract River, which comes out of the ground in torrents at the head of their camp. The flow is so great that the amount used for irrigation is hardly noticeable. Evidences abound showing that the Indians practised irrigation hundreds of years ago. The Fredonia Ditch receives its waters from Kanab Creek. Owing to the great width and sandy nature of the creek bed, the flow is very irregular. The winds drive the shifting sands across the stream, causing the water to spread over a large area, where it soon evaporates.

The stock-raising industry has suffered considerably owing to restrictions of forest-reserve acts and lack of snow and rain. Sheep raising is profitably carried on in the county, and great quantities of wool produced each year.

The lumber industry is prominent in Coconino County, large lumber mills being located at Flagstaff and Williams. An unlimited supply of timber is secured from the forests of the county.

Coconino is the largest county in the Territory, and includes within its boundaries parts of the Hopi, Navaho, Walapai, and all the Havasupai Indian reservations, the last named being situated in the Grand Canyon Reserve. The greatest length of the county is 185 miles, its greatest width 140 miles, and its area is nearly 19,322 square miles, being larger than the combined area of Vermont, Massachusetts, and Delaware. It is on the great Colorado plateau, and the greatest portion has an elevation of nearly 7,000 feet. Across the northern part the county is traversed by the Colorado and its tributary, the Little Colorado. These rivers have cut steep-walled canyons thousands of feet in depth, abounding in wildly picturesque scenery and wonderful gorges. Though carrying a large volume the rivers are useless for irrigation, as the waters are hundreds or even thousands of feet below the surface of the arable land. Owing to this lack of an available water supply the area irrigated is small and is confined to the localities of Lees Ferry, Tuba, Supai, and Fredonia.

Besides that flourishing Territorial institution, the Northern Arizona Normal School, located at Flagstaff, there are public grammar schools at Flagstaff and Williams, while at other settlements suitable teaching accommodations are provided. The Academy of the Nativity, a Catholic school under the control of the Sisters of Loreto, is also an important factor in local educational circles. Churches of the various denominations are to be found at Flagstaff, and Williams, and at Fredonia, and their influence for good is noted in the peace of the community.

Coconino hitherto unregarded as a mining county, has mineral deposits of great promise.

The Canyon Copper Company is rapidly developing its extensive property in Grand Canyon. Its claims are patented and will soon be producers.

Several deposits of copper ore between Williams and the Grand Canyon are being exploited, also a very large deposit north of the Colorado River in the southern end of the Buckskin mountains.

Near Flagstaff is the seemingly inexhaustible quarry of Arizona brown sandstone of which the Brown Palace Hotel, of Denver, the Los Angeles County court-house, and other notable buildings in the West are erected.



## GRAHAM COUNTY.

The valuation of taxable property in Graham County shows an increase of over \$1,000,000 during the past year. The tax rate is \$4 for every \$100 of taxable property, this including the Territorial tax. The total bonded indebtedness of the county is \$192,864.70; the floating indebtedness is \$28,036.17, making the total indebtedness \$220,900.87. On January 1, 1903, the county treasurer reported \$235,378.51 as representing the receipts for the year and the balance on hand.

Mining is the chief industry in the county, the great mines of the Arizona Copper Company, the Detroit Copper Company, the Shannon Company, and others being located there. Progress has been made in mining, and many new camps have appeared during the year adding their production to the yield of copper, gold, and silver. Graham is one of the greatest mining counties in the Territory.

In stock raising it takes lead with the biggest counties, many of the largest ranches in the Territory operating within the limits of its boundaries. Cattle feeding is an extensive industry in the valleys, and stockmen can depend upon excellent pasturage whenever the ranges become depleted from droughts.

Agriculture is engaged in extensively in the different valleys, the Gila being the largest and the most important in this respect. The products of the valleys find ready markets in the mining camps, the demand being great at all times for all manner of products. Hay and grain are produced in large quantities. In the upper Gila Valley Duncan and Franklin are prosperous settlements, while in the main valley of the Gila are the towns of Solomonville, the county seat, Safford, Thatcher, and Pima. There are large farms and cattle ranches in the county yielding profitable incomes to their owners.

The population of Graham County is between 17,000 and 20,000. There has been a considerable increase during the past year.

## GILA COUNTY.

Gila County has had a more substantial growth during the past year than any heretofore. The population can only be estimated, but an increase is noticeable. The Old Dominion mine is working on an average of 350 more men than last year, and the influx occasioned by the building of the Tonto reservoir is estimated to be about 600.

Globe, the county seat, has expanded greatly, stores and dwelling houses for newcomers being almost unobtainable. Confidence in Globe's future as a permanent camp is generally expressed. The report of Gila County for the year 1903 shows Globe to have 3 banks, 1 electric-light plant, 1 waterworks system, 1 ice plant and cold storage, 1 natatorium, 11 mercantile establishments, 7 lodging houses, 2 drug stores, 2 hotels, 5 restaurants, 5 barber shops, 2 bakeries, 2 shoe shops, 14 saloons, 2 churches, 2 livery stables, 2 gentlemen's furnishing stores, and 2 millinery stores.

The cattle industry has suffered more this year than any during the past ten, owing to the protracted and severe droughts which have caused excessive losses to the cattle owners, as well as a reduction of the taxable property. Gila County is one of the largest cattle producing counties of the Territory. Beef is supplied to the home markets and stock is shipped to the Northern States and California.



The assessed valuation of live stock in the county for the year 1904 is as follows: Cattle, \$253,380; horses, \$48,060; goats and sheep, \$36,452.

The mining industry of the county has made marked advancement. The consolidation of the Old Dominion and United Globe properties gives assurance of the permanency of these mines.

The Old Dominion Copper Mining and Smelting Company in the past year has laid about 4 miles of railroad track and equipped it with rolling stock. The new furnaces and converters will be completed by September 15, 1904, and the concentrators are expected to be running some time in October. The new shaft, destined to be 1,400 feet deep, is now down to the tenth level, where a station is cut and a new Prescott pump with a capacity of 1,500 gallons per minute installed, and one of like capacity will be put in on the twelfth level, thereby insuring the easy handling of the water in the mine.

When complete the Old Dominion plant will be one of the best in the Territory. The ore will be carried from the mine to the smelter in self-dumping cars of 50 tons capacity, run on a standard-gauge track. The smelter will have a capacity of 3,000,000 pounds of copper per month. The mineral deposits consist of large bodies of quartz on the upper levels, with large bodies of iron on the fifth level, while the lower levels, especially the eleventh and twelfth, carry immense deposits of sulphide ores, which are said to be of high value, running from 6 to 35 per cent in copper.

The United Globe mines consist of about 35 claims, the most of which are patented. The Gray, Hoosier, and Big Johnny are the principal mines of this group. The Gray shaft is down 865 feet in the main shaft and a winze has been sunk to a farther depth of 300 feet, making a total depth of 1,165 feet, which is the deepest working in the district, and shows conclusively that large ore bodies exist as depth is attained.

The Black Warrior Copper Company, Amalgamated, is inactive at present. This plant consists of a reverberatory furnace, leaching plant, concentrator, and acid plant, together with store, office, and warehouse buildings and dwellings. It is expected that active operations will be resumed during the year.

The Summit group of mines, owned by S. L. and C. W. Gibson, have attracted a great deal of attention, having produced from the grass roots. All development work has been paid for from the values of the ores as taken from the mine.

The Arizona Commercial Company, Globe-Boston Mining Company, Keystone Mines, the Arizona-Colorado Copper Belt and Gold Mining and Milling Company, and the Globe Mining Company (Mineral Farm) are all prominent mining companies in the district.

The Tonto dam and reservoir, which is being constructed about 35 miles north from Globe, will be one of the largest water storage reservoirs in the world. The height of the dam will be 245 feet and the depth of water stored at the dam will be 195 feet when full. The dam will be 165 feet wide at the bottom and 16 feet at the top. The project represents practically nothing to Gila County in taxable wealth, but it will be of great benefit to Arizona, and especially to the Salt River Valley.

The Gila Valley Globe and Northern Railway Company is transacting double the business of former years. A year ago two mixed trains

were sufficient to handle the traffic of this road, while to-day two passenger trains and two freight trains are operated daily. The management, under Col. Epes Randolph, is having a survey run north from Globe, through the Tonto reservoir site, into Pleasant Valley and the Mongollon Mountains, and it is hoped that the resources of northern Gila County will soon be more available.

Pleasant Valley and the Tonto Basin country, extending to what is known as Rim Rock, are parts of this county but slightly developed, owing to lack of railroad transportation, but thousands of cattle, horses, and goats are annually raised in this district. In the valleys subject to irrigation the crops are prolific and large crops of fruit are often without a market.

What is known as the "coal strip" lies near San Carlos, and was formerly a part of the White Mountain Indian Reservation, but now has been set aside by Congress, and is opened to the prospector. At the present time the Tri-Bullion Copper Company and Phelps, Dodge & Co. are the principal parties working in this district.

Something of importance to Gila County, and a matter on which action has been delayed, is the setting aside of the proposed Pinal Mountain forest reserve. These mountains were formerly thickly covered with stately pines and shrubbery in abundance. To-day they are denuded and their rocky ridges stand forth as a monument to the destructiveness of the woodman's ax. The grass that once grew luxuriantly grows no more, and the rain as it falls on the mountain runs off rapidly. Nature has been deprived of its power to hold this water and store it to feed the numerous springs that formerly gushed forth from these mountains. Goats have been very destructive here; they have eaten the young, tender shoots, and their feet soon wear a thousand small trails through the underbrush, making natural runways for the water as it falls and carrying it down to the canyons, doing but little toward the natural irrigation of these beautiful mountains.

I am under obligations to Mr. W. D. Fisk, recorder of Gila County, for the information presented in the report of Gila County's progress.

#### MARICOPA COUNTY.

Agriculture is the chief industry in this county, although there are some mines and activity in their development. This county has the largest population of any in the Territory, and the increase each year is considerable. The construction of the Tonto dam will attract large numbers of settlers, and thousands of acres of land which is not cultivated to-day, owing to the absence of an adequate water supply, will be made productive.

During the year the Phoenix and Eastern road was built from Phoenix to Kelvin, Pinal County, adding to the commercial importance of the Salt River Valley and its chief cities, Phoenix, Mesa, and Tempe.

The Salt River Valley is reached by both the Santa Fe and Southern Pacific systems. From the south comes the Maricopa and Phoenix and Salt River Valley Railway, making connections at Maricopa, 35 miles away, with the Sunset Route. From Tempe a branch of this road leads to Mesa, 18 miles from Phoenix. From the Santa Fe system Phoenix is reached by the Santa Fe, Prescott and Phoenix Railway, 198 miles in length. Both railways into Phoenix are fully



equipped for passenger travel, all trains including modern appointments and standard sleepers.

Stockraising is extensively engaged in, and thousands of head of cattle are fed every year in the valley. During times of drought range stock is driven to the valley for pasture until the rains replenish the ranges. It is estimated that there were fully 50,000 head of range cattle pastured in the Salt River Valley during the past winter when the ranges suffered from extreme drought.

The mining industry of Maricopa County has been relegated to one of the last of the industries of importance, although hidden in the mountain ranges within sight of Phoenix are mineral treasures destined to great consideration. It has been asserted by mining men that the importance of this industry in time will eclipse that of agriculture and cattle raising—now by far the most important occupations. Wickenburg, located just south of the Yavapai County boundary line, in Maricopa County, is the seat of recent mining activity, although the contributors to that camp for the most part are Yavapai County mines. There are regions, however, in Maricopa County tributary to Wickenburg which contributed early to the mineral wealth of this county. In the southeastern part of the county is the gold field district where mining operations are carried on to some extent.

The products of Salt River Valley are of a very wide range and great variety. Nearly everything in the way of grains, vegetables, and fruits grown in the temperate and semitropic zones flourish here. Wheat and barley are of an exceedingly fine quality. The principal forage plant for hay and pasture is alfalfa, or Chilean clover, a remarkable plant which grows perennially and yields very abundantly. Seven tons per acre per annum is not an unusual yield, the hay being cut from three to seven times each year. All kinds of vegetables grow with wonderful rapidity. Many of them, with proper care and irrigation, can be produced the year round. All kinds of berries flourish, the strawberry in particular. With proper attention to varieties and cultivation strawberries can be had daily for eight months of the year. All kinds of deciduous fruits do exceedingly well throughout the entire valley, but in the upper parts, where the soil is of light sandy nature, the adaptability is perfect. The soil along the river being heavier, is more suited to the cultivation of grain and forage. The raising of all kinds of citrus fruits is confined to a comparatively small portion of the valley.

#### MOHAVE COUNTY.

Mohave County, in the northwestern corner of the Territory, is one of the important mining counties of Arizona and the one that depends the most exclusively on the mining industry. On its west are California and Nevada, and on its north Nevada and Utah. The Colorado River bounds it on the west. It has 13,421 square miles, but a very small population. Very little of its arid valleys and plains are yet irrigated, but the county has thousands of acres that could be reclaimed. Three mountain ranges traverse the county from north to south, and their rocky ribs are seamed with ledges of gold, silver, copper, and lead. Near Mineral Park are many ledges of turquoise, which show evidences of having been systematically worked by a prehistoric race.



Stone hammers and rude tools have been found in all the openings of the mines. There are immense beds of gypsum along the Colorado River northwest of Kingman.

Mohave County's mines are estimated to have yielded over \$40,000,000 in thirty years. Mining began in 1860, but did not flourish until the coming of the Santa Fe Pacific Railroad across the country. Before that communication with the outside world was by way of steamer down the Colorado River. Some very valuable discoveries were made in the White Hill district in 1892, since which time large amounts of eastern capital have been invested and development has been rapid. In one case an English company paid \$1,750,000 for the White Hill group, and have since expended \$500,000 in developing water and working the mine. At Chloride a 100-ton concentrating plant is being worked by a Scotch syndicate on the ore from the Elkhart mine, and a 40-ton stamp mill is working in the White Hills.

The Hualapai mining district contains an area of 15 miles in length by 3 miles in width, and is composed of five different mining camps—Chloride, Mineral Park, Todd Basin, Cerbat, and Stockton Hill.

A few miles south of Kingman a district rich in gold is being opened up. There has been little, if any, increase in the settlement of land. While no country can excel the valleys of Mohave County in fertility of soil, the scarcity of water for irrigation retards their settlement. The system of dams on the Colorado River, as proposed by Arthur P. Davis, hydrographer of the United States survey, would place under irrigation hundreds of thousands of acres of land excelled by none in the world. In Mohave County alone sufficient land could be irrigated to support a population of half a million people.

In addition to the great benefit to be derived from these dams for irrigation, the immense power developed could not only be used for power in mining operation, railroads, etc., but could be used also for the reduction and refining of ores.

There has been little change in the past year in the matter of stock-raising. The uncertainty of the rainfall discourages investment.

Mining is the great industry of Mohave County, and the past year has been one of progress in all mining districts.

#### NAVAJO COUNTY.

The population of this county has increased steadily and permanently in the past year. The increase is due to the settlement in the county of former residents of Tuba City, Coconino County, having sold their lands and holdings at that point to the Government for Indian school purposes. These people are a very desirable class of settlers and home-makers.

There are about 4,000 acres of land under cultivation in Navajo County, producing all kinds of grains, fruits, and vegetables found in a temperate climate, and the agricultural possibilities are limitless, with sufficient water for the purposes of irrigation.

With the increase of the farming population comes the added financial prosperity of the county. The assessment roll for the year shows about \$1,500,000 of assessable property, being an increase of about \$200,000 over last year; but owing to the long-continued drought, affecting particularly the stock interests, and indirectly other industries, the board of supervisors, sitting as a board of equalization, made

a reduction of 20 per cent on stock, cattle and horses, sheep, cultivated lands and improvements, town lots and improvements, and stocks of merchandise, leaving the total assessed valuation at \$1,229,644.97.

The county is conducted on economical business principles as heretofore, with no outstanding warrants or other liabilities than shown as follows: Territorial funding bonds, at 5 per cent, dated January 15, 1903, redeemable after twenty years, maturing in fifty years, \$38,000; court-house and jail building bonds, \$15,000; total bonded indebtedness, \$53,000. Total assets represented in public buildings, bridges, and other county property, \$68,780; value of school property owned by county, December 31, 1903, \$20,000; cash on hand, as per treasurer's report, June 30, 1904, \$15,244.91; total value of county property and cash on hand, \$104,024.91.

The abstract furnished the territorial board of equalization by the clerk of the county board shows the following live stock: Range horses, 1,359, valued, after deducting 20 per cent, \$10,599; range cattle, 3,666; valued, after deducting 20 per cent, \$35,200; sheep, 73,460, valued, after deducting 20 per cent, \$117,536; all other stock, including work and saddle horses, stallions, mules, jacks, milch cows, bulls, goats, and swine, \$30,945.50. These are held by individuals and are principally graded stock. Under favorable conditions of range and water, stock raising is the most important industry in the county.

The county superintendent of schools reports a prosperous condition of all the schools in the county, each district having a surplus of funds on hand for the ensuing school year. This can be accounted for by the fact that the county board of supervisors make a more liberal apportionment of the tax levy for school purposes than is made by any other county, being 90 cents on each \$100 of taxable property and 5 per cent of a reserve fund. The total apportionment for the last school year was over \$14,000 for 12 school districts, the board realizing that the liberal distribution of money for school purposes is well invested, and mindful of the importance of giving the children the advantages of an education.

With the agricultural and stock industries steadily increasing and with possibilities of water storage, Navajo County will take its place among the most prosperous counties of the Territory.

Holbrook, the county seat, is the most important shipping point between Albuquerque, N. Mex., and Needles, Cal., being the supply point for a radius of country of over 200 miles in extent. Some idea may be gained of the amount of freight shipments made from the figures received through the courtesy of the railroad agent, Mr. J. H. Atwood, and the quartermaster's agent, Mr. Thorswald Larson, presented as follows: Amount of wool shipped up to June 30, 1904, 760,000 pounds; amount of freight received, 1,700,194 pounds; amount of Government freight received during same period, 2,120,000 pounds. A large amount of live stock was shipped to eastern markets, the figures not obtainable.

Winslow, the largest town in the county, 33 miles west of the county seat, is an important railroad center, being the end of the passenger and freight divisions of the Atchison, Topeka, and Santa Fe Railway. The company at this point has large roundhouses, machine and repair shops, depot buildings and eating houses, and also a hospital for sick and injured employees. The monthly disbursements of the company amount to about \$50,000. The town has recently completed a system



of water service, with fire hydrants and an organized fire department. It also has telephone, ice, and electric plants.

The prospects for oil development near the town of Winslow are very favorable. At present the work of boring is in progress. About 32,000 acres have been located and recorded. There are also deposits of mica and gypsum in the vicinity of the town which will eventually have a large marketable value.

The next town of size and importance is Snowflake, 30 miles south of the county seat, with a population of about 600. This town is situated in a fertile well-watered valley. The residences and business houses are built of brick, with shade trees lining the wide and regularly laid out streets.

St. Joseph, Woodruff, Taylor, Show Low, Pinetop, Pinedale, and Heber are thriving towns, each contributing its share to the general well being of the county. In none of these communities are lacking the elements which constitute intelligent citizenship, a respect for the law and a desire for intellectual advancement. The record of the district court, which is held once a year by the Hon. R. E. Sloan, shows that not one of the few criminals brought to trial during the year were citizens of the county. The last term of court lasted three days, the most of that time being occupied by civil cases.

Mr. Alex. F. McAllister, recorder and clerk of the board of supervisors of Navajo County, furnished me with the information contained in the above statement.

#### PIMA COUNTY.

Mining, cattle raising, and commercial enterprises occupy the attention of the people of Pima County. Rich copper, gold, and lead mines are operated profitably, and immense bodies of ore yet await the industrious prospector.

The assessed valuation of Pima County's taxable property for the calendar year 1903 amounts to \$3,900,000, presenting an increase over 1902 of nearly \$200,000, the increase being due to the many permanent improvements made throughout the county.

There are 260 patented mines in the county, having an assessed valuation of \$70,000. One group of these mines changed hands during the month of May, 1903, for a cash consideration of \$500,000.

The bonded indebtedness of Pima County is as follows:

Territorial 5 per cent bonds.....	\$210, 240
County 7 per cent bonds.....	50, 000
County 4 per cent refunding bonds.....	47, 000
Total.....	307, 240

The resources of Pima County are as follows:

7 per cent bonds due from Santa Cruz County.....	\$8, 513. 33
5 per cent bonds due from Santa Cruz County.....	44, 893. 67
Cash in treasury.....	29, 000. 00
Court-house and county property.....	50, 000. 00
Total.....	132, 457. 00

During the past year numerous final certificates of Government land were issued by the United States land office at Tucson for land in Pima County occupied by settlers.

There are thousands of acres of land in this county susceptible of cultivation. The benefits of irrigation such as is proposed by the



Hansbrough-Newlands law will soon be realized, and then thousands of acres of land, comprising rich alluvial soil will be brought under cultivation, and will open up agricultural possibilities that will surpass the most sanguine expectations.

Fruits, such as apples, peaches, pears, melons, and grapes of the finest flavor are produced, surpassing the famous fruits of California. Chinese gardeners raise and market all kinds of table vegetables.

The development of water in Pima County has been given considerable attention during the past few years. The city of Tucson is supplied with a superior quality of water pumped from wells dug 40 feet deep. The city operates four wells side by side, having a daily capacity of over 5,000,000 gallons. Many of the residents have erected wind-mills and have secured an abundance of water at depths ranging from 20 to 80 feet.

There are 5,000 horses in the county. The number of cattle is estimated at 40,000. Sheep and hogs are not raised to any great extent although the market value of these animals is inviting. During the past year there was a number of cattle shipped by rail from Tucson to northern and eastern points. The quality and breed of range cattle is rapidly improving owing to the importation of thoroughbred Hereford bulls that range with the cattle.

The numerous locations of mining claims during the year show unusual activity in the mining districts of the county. A great many mines are working constantly, labor and fuel being plentiful and cheap. Development of copper, gold, and other precious metals is being prosecuted vigorously.

The transfer of the Silver Bell properties for a consideration in excess of half a million dollars, and the organization of a company to operate the Twin Buttes mines, indicates a healthy condition in the mining industry of Pima County.

The Greaterville placers are also being profitably worked by California capital, about 2,000 acres having been patented recently. Many smaller mines are being successfully operated and the outlook is encouraging for mine owners.

The county roads are a great delight to the owners of automobiles and horses, being hard and smooth. Substantial bridges span the river beds and water courses.

Pima County is proud of the many school buildings that have been erected by the progressive citizens of each school district, and which are presided over by intelligent and enthusiastic teachers devoted to the welfare of the pupils. More than 4,000 pupils attend the public schools of this county, and 500 children attend the convent and schools conducted by the Catholic sisters at Tucson. The University of Arizona is located at Tucson, and is a great factor in developing the best citizenship. Tucson has a splendid public school system, with a large corps of trained teachers. The Catholic sisters conduct a school for girls and a free school for boys.

A new sanitarium conducted by the Sisters of St. Mary, together with a modern operating room, are worthy improvements.

The religious denominations are represented by Presbyterian, Methodist, Congregational, Episcopalian, Catholic, and Baptist. All of these denominations except the Presbyterian own and occupy comfortable church edifices, and are doing good work in the upbuilding of the community. The Roman Catholic cathedral is the largest in the Territory,

Tucson is the headquarters of the Southern Pacific Railroad Company, of the district from Yuma to El Paso, a distance of nearly 600 miles, together with all branch roads connected therewith. The machine shops and supply stores are also located there, and the company disburses over \$150,000 each month at Tucson.

#### PINAL COUNTY.

In Pinal County mining, stock raising, and agriculture combine in advancing the material well-being of the people. Agriculture has received a setback, owing to the drought and the consequent shortage of water for irrigation; but this condition will be obviated on the completion of the San Carlos Dam, a worthy project, which will no doubt appeal to the honorable Secretary of the Interior as a medium for enlarging the benefits to be derived from the application of the reclamation law in this Territory.

Mining has been carried on in Pinal County for many years, and there are several promising properties, among them being the Troy, Ray, Copper Buttes, Bonanza, Copper Hill, Golden Eagle, Standard, Gila-Pinal, and many others. Pinal County is regarded as one of the most promising mining fields in the Territory.

Shipments of ore have been made during the year, but there has been little bullion smelted by local works. Extensive exploitation is going on throughout the county, the Troy being credited with the production of quantities of good ore. The Copper Buttes Company is working its mines in the Buttes on the Gila River and has a promising prospect. The Lake Superior Company, with mines in the northern part of the county, has made several carload shipments of ore. The Troy-Manhattan Company's mines in the northeastern part of the county have been worked constantly during the year, ore having been produced in quantities.

There are 41 patented mines on the assessment roll of Pinal County, the assessed valuation thereof being \$41,000. The construction of the Phoenix and Eastern Railway to Kelvin has brought about greater activity in mining, lessening the cost of operations to some extent. With railway facilities the future of Pinal County is very bright, and the people confidently look for a new era of progress.

Owing to the severe drought the cattle industry has suffered during the year, and in consequence the total valuation of all property in the county is considerably less than the year previous.

On June 30 the floating indebtedness of Pinal County was \$9,540.56. The money on hand was \$11,234.85. The county has a funded debt of \$136,138.08, and court-house and jail bonds outstanding amounting to \$6,000.

There has been some increase in the population, principally in the mining districts, the county having approximately 8,000 people.

There are several ditches taken from the Gila River, the largest being the Florence, 47 miles in length, with a reservoir of 1,600 acres. The canal is taken out of the Gila River about 3 miles west of the Buttes, and runs in a southwesterly direction 47 miles through the Casa Grande Valley. The reservoir is situated about 13 miles southwest of Florence on the line of the canal. This ditch carries 3,000 miner's inches of water and was built at a cost of \$500,000. In the vicinity of Sacaton on the reservation there are 10 ditches of small



dimensions taking water from the Gila River which are owned and controlled by the Indians. In the San Pedro Valley irrigation is practiced on a small scale by ranchers, five or six ditches being in operation. The Arivaipa Creek, a tributary of the San Pedro River, traverses a rich agricultural valley, and there are many small ranches along the creek.

Pinal County is rich in undeveloped resources. The construction of the San Carlos Dam will be the means of bringing thousands of acres of fertile lands under cultivation, and the county's taxable wealth will be wonderfully increased. The railway traversing the Gila and San Pedro valleys will open up a rich country to settlement.

#### SANTA CRUZ COUNTY.

Mining and stock raising are the chief pursuits in this county. Agriculture is carried on to some extent in the Santa Cruz Valley and along the Sonoita River. The soil is very fertile, and when there is sufficient water easily produces two crops a year. Irrigation is carried on to some extent, but the supply of water is insufficient. It is estimated that with sufficient water fully 30,000 acres of land could be brought under cultivation, thus increasing the assessable value of property within the county by more than a million dollars. This could easily be brought about by the construction of a storage dam on the Santa Cruz River. It is said that one of the best reservoir sites in Arizona is situated on the Santa Cruz River, in this county, about 4 miles from the international boundary line. The supervisors of Santa Cruz County ordered a preliminary survey, which shows that a dam can be constructed there 900 feet long and with an average height of 40 feet. Such a dam will impound flood waters of the summer and early fall forming a reservoir covering 3 square miles and with an average depth of 30 feet. Nearly all the land submerged is unsurveyed, unoffered Government land, there being but few irrigating rights involved. The estimated cost of such a dam, according to the surveyor's report, will be from \$80,000 to \$100,000, and will be of almost incalculable value to Santa Cruz and Pima counties.

Santa Cruz County is notable for its large cattle ranches, and is regarded as one of the most profitable counties for stock raising.

The mining development has been substantial and unusually active during the year. This is especially true of the Patagonia and Oro Blanco districts. There are many rich mining districts in the county, the principal ones being the Patagonia, Harshaw, Tyndall, and Oro Blanco. The principal mines in Santa Cruz County are the World's Fair, the Pride of the West, the Hardshell, the Trench and the Mowry, in the Patagonia and Harshaw districts, and the Tres Amigos, the Monarch, the Ragnarac, the Sorrel Top group, and the McDonald properties in the Oro Blanco district.

The undeveloped resources of Santa Cruz County are extensive. It is a recognized fact that the mineral resources of this county have never been developed, there being at the present time but a small number of producing mines. The county is rich in mineral, and wherever development has been prosecuted to any great depth upon ore bodies excellent results have been obtained.

The population is rapidly increasing, and a conservative estimate at present places the number of people in the county at no less than



7,000. With the continued opening up and development of the rich mineral resources it is confidently expected that the population will show a still greater proportionate increase during the next year. Nogales, the county seat and principal town in the county, is a growing, thriving little city of about 2,500 people. Situated, as it is, on the international boundary line between the United States and Mexico, at the gateway of the rich and rapidly developing State of Sonora, Nogales is destined at no far distant day to be one of the most important cities of southern Arizona and of the Southwest. Its citizens are of the sturdy, substantial class, the greater number of whom own their own homes. A great number of substantial business structures and neat brick and stone cottages have been built during the past year. The new Santa Cruz County court-house, costing \$35,000, is one of the most substantial, commodious, and up-to-date structures of its kind in the West.

#### YAVAPAI COUNTY.

This county has always progressed owing to the substantial character of its developed resources. The mines contribute the most to the material advancement of the county, although stock raising and agriculture are pursued successfully. Some of the richest mines in the Territory are located in Yavapai County. Gold, copper, and silver are produced. At Mayer there are onyx deposits covering an area of 250 acres. They are worked by the Denver Onyx and Marble Company, the product being shipped to all parts of the world.

Prescott, the county seat, is a thriving city, delightfully located in a basin of the Sierra Prieta Mountains. The Bank of Arizona, located there, enjoys the distinction of having the largest deposits of any bank in Arizona, showing the substantial character of Prescott's financial institutions.

Prescott is the metropolis of northern and central Arizona. The summers are ideal, the city being at an elevation of 5,432 feet above sea level, and annually hundreds of tourists come to camp out in the open and avail themselves of the pure and dry air. The population of this city may conservatively be placed at 6,000; it also enjoys the distinction of being one of the most progressive cities in Arizona. Its commercial houses are architectural beauties, solid, and modern, while in comfort and design the residences are pronounced by the visitor as an agreeable surprise to what was generally anticipated as prevailing on the border land of the Union.

In a commercial sense Prescott is the gateway to a vast domain of country, and from it and to it all roads go and come, whether it be the railroad, wagon road, or the burro trail. Every line of business is represented.

The public school interests are as sacredly guarded here as in New England, and that this spirit prevails it may incidentally be mentioned that a brick building that cost over \$60,000 to build is utilized for that purpose. The Sisters of St. Joseph also maintain a seminary, and they, too, find favor with generous patronage.

Within the boundaries of the county are located the valleys of the Verde, Skull, Kirkland, Chino, and others. In addition to these are the bottom lands that lie at the foot of mountain ranges and along the many water courses. All of these sections produce abundantly in

grain, fruit, and vegetables, and in fertility can not be surpassed. The most prosperous and productive area in the county is that of the Verde, covering a distance in length of 29 miles by a width of 4 miles. This particular locality is well watered and production is heavy. Through its agricultural resources it sustains a population of at least 1,500 people. With water storage reservoirs located at desirable points there is no reason why agriculture can not be made as prominent as mining.

## YUMA COUNTY.

Yuma county is regarded as one of the best gold-producing sections of the Territory. The precious metals are found in all parts of the county and numerous rich mines are constant producers there.

The future progress of agriculture in this county is now assured, with the Government irrigation works under way. Preliminary surveys have been made and the projects outlined by the Government engineers will be constructed on condition that the requirements of the Government are carried out by the landowners in accordance with the provisions of the reclamation law. This is now being done and active work will no doubt be started by the Government during the coming year.

The board of trade at Yuma states that there are 350,000 acres of arable land lying under the proposed dam at Cocopah Point. Of this 280,000 acres are level mesa lands, above the frost line—the finest of land for oranges, lemons, and early fruits; 70,000 acres are rich alluvial valley lands, lying along the Colorado and Gila rivers. Of these 60,000 acres lie under the outflow of canals already in operation. Much of this 350,000 acres is Government land open to settlement. Nearly all of the valley land has been already filed upon by settlers, since it was first thrown open to settlement in 1901, but many claims and even patented land can be purchased at figures ranging from \$5 to \$100 per acre, according to location and improvement. Much money has been made by those who have purchased lands in the past two years. There are many cases where claims purchased three years ago for \$400 are now worth \$6,000, although no expensive improvements have been made.

The climate and soil of Yuma County seem to be perfectly suited to alfalfa. It grows so rapidly that it is mown always seven times, often eight times, a year, producing from 1 to 2 tons per cutting. The average yield is 10 tons per acre per year, and the best fields often produce 12 tons. Besides yielding this quantity of hay, the fields furnish good pasture during two or three of the winter months. The season is so long that the first crop is cut early in April and it is not unusual to see ranchers haying at Christmas time.

All citrus fruits do well and the early season again gives Yuma the advantage. The orange crop is usually about exhausted when the main California crop reaches the market.

Many of the ranchers near Yuma manage their rotation of crops in the following way: In the fall, as early as possible, the land is sown to wheat or barley. This soon attains a rank growth and cattle are turned upon the grain to pasture it down. This continues until February, when the grain is allowed to grow up. It is ready to harvest in late May or early June, producing 2,400 to 3,000 pounds of grain

per acre. The land can then be plowed and put into Indian corn, sorghum, or Kaffir corn, with immense yields and ripening in October.

Some ranches have been very successful with the following rotation: In the winter alfalfa sod is plowed shallow, or cut up with a disk harrow, and wheat or barley is harrowed in. The fertile soil, enriched by previous pasturing, and the alfalfa sod produces from 2,700 to 3,000 pounds of grain per acre. Meanwhile every alfalfa crown has sent out shoots which come up in a mat all through the grain. This makes the straw, when cut, excellent feed for cattle. The grain is cut in early June, and the alfalfa then takes the ground and in a month is ready to cut for hay. Thus one crop of grain, one crop of straw, half alfalfa, and four cuttings of alfalfa, averaging 1 to 1½ tons to the acre, are secured in one season.

#### MINING.

The actual production of the precious metals in Arizona for any one year is only approximately known. There is no Territorial agency which provides accurate statistics, and without some definite means of securing reports from all operating mines it is impossible to more than estimate the output.

In my report for the year 1903 I endeavored to give an accurate idea of the progress of mining by submitting statements from mine owners throughout the Territory, but I found that scarcely one-fourth of the companies and individuals to whom I addressed requests for such reports gave the matter attention. Through the assistance of the railway companies I expected to present in that report figures showing the shipments of bullion and ores, and in this way getting at the actual production of mines in the Territory, but when I had received and tabulated these reports objection was raised by one or two railway companies to the use of their statements. Therefore, with no agency through which reports from mine operators can be secured, I can merely review the progress of mining in Arizona during the fiscal year ended June 30, 1904, giving such figures as I am able to find which will show the production.

Copper mined in this Territory during the year 1903 yielded to the markets of the world over 150,000,000 pounds. These figures are based on reports from the leading mines. During the past fiscal year the production from all sources in the Territory will reach 230,000,000 pounds. I base this estimate upon information from the leading operating mines, such as the Copper Queen, the Detroit Copper Company, the United Globe and Old Dominion, the Arizona Copper Company, the United Verde, and the Calumet and Arizona.

At the works of the Phelps-Dodge Company, in Arizona, there was manufactured during the month of June 16,000,000 pounds of copper. Taking this as an average monthly production throughout the year, this one company, with works at Bisbee, Douglas, Morenci, Clifton, and Globe, manufactured 192,000,000 pounds. Add to this the production at Jerome by the United Verde Works, approximately 30,000,000 pounds, and the production of individual works in Mohave, Yavapai, Pima, Pinal, Cochise, Yuma, and Graham counties, the total will reach the estimate I have given. In further support of this estimate, I would call attention to the production of the Shannon Copper Company's works in Graham County, one of the new mines of this Territory. In



June this company produced 477 tons of copper and in May 463 tons. For the first six months of 1904, or rather the last six months of the fiscal year ended June 30, this company produced 6,000,000 pounds of copper. At this rate of production the Shannon Works, producing 12,000,000 pounds a year, the United Verde, 30,000,000, and the Phelps-Dodge interests, 192,000,000, there can be no doubt but that the total production in the Territory was fully equal to the estimate I have presented.

A great many producing mines are not taken into account in arriving at the total production, only in a general way, and I give the figures in round numbers for the reason that no definite statistics can be secured covering the entire Territory, as I have heretofore stated.

Through the wealth of its mines Arizona has become a great manufacturing region. It occupies third place in the production of copper, with Montana and Michigan leading. The progress made is rapid and substantial. Adverse conditions had to be met and difficult problems solved. During many of the years of copper mining there was little encouragement owing to the low prices commanded, or because of unfavorable local conditions; but, on the whole, this industry has risen rapidly, depth adding to its strength and entrenching it firmly at the very source of wealth.

The production of copper began in Arizona in 1873 at the Longfellow mine in Clifton, Graham County. Previous to this time there was some copper smelted by means of crude adobe works whose capacity ranged from 1 to 4 tons daily. The output of copper up to the year 1880 is unknown. No copper region in the world has shown such marked gains in production during the past decade. The great activity throughout the copper-mining districts of the Territory is fast bringing new mines into prominence and adding new sources of production.

Copper mining is expanding beyond the expectations of all who first dreamed of wealth from its source. Arizona in 1903 produced 60 per cent as much copper as Montana, the greatest copper region in the United States. It produced 73 per cent as much copper as Michigan with its great Calumet and Hecla mines. Each year the percentage of increase lessens the distance to first place, the ultimate goal of Arizona's progress in this industry.

The Old Dominion copper mine at Globe is credited with having produced during its span of intermittent activity 120,000,000 pounds of copper. With this yield to its credit, the mine is still considered in the first stages of its development. This is mentioned to show the substantiability of copper mines that have been developed. Not all mines are like the Old Dominion, but I think I am safe in saying that every copper mine in this Territory that has reached the same stage of development can be classed with it as a wealth producer.

It has been stated that Arizona contains one-third of the copper mines of the world. This is no doubt true when we take into account every prospect and every virgin lode upon which monuments rest vesting ownership; yet it is an unfair statement, for the reason that it conveys a wrong impression. There are thousands of mines in Arizona that are nonproductive, it is true, if they are to be called mines. The United Verde and many other mines were also nonproductive with the same amount of development. Timidity never accomplished anything

in mining. An industry that returns such great profits must have a corresponding element of chance, and the value of a mine is disclosed only upon extensive exploitation.

During the past year the Copper Queen Company transferred its smelting operations from Bisbee to Douglas. Bisbee to-day is essentially a mining camp, and Douglas has become a manufacturing center of great importance. At Douglas the ores from the Copper Queen mines at Bisbee and the ores from the Nacosari properties in Sonora will be treated. Aside from this the company has opened a customs department, and ores from the thousands of mines in Arizona and Sonora will be afforded a ready market. Heretofore operators of small mines have shipped their products to El Paso smelters at great expense in freight rates. The opening of the customs works at Douglas will encourage mining throughout the southwest and increase the productivity of the Territory.

The Old Dominion Mining Company at Globe now embraces the United Globe mines at that place. The aggregate output of this company during the month of May was close to 1,600,000 pounds, returning to the company about \$60,000 net. This was the best record in the history of the company, and is mentioned merely to show the progress that is being made. The company's smelter is now treating about 60 tons of ore per day from the United Globe property alone, the average yield of which is 15 per cent copper. The company is holding back the output of the Old Dominion mine in order to place the property in better condition and open large ore bodies to be mined in the future.

The great copper district surrounding Bisbee has attracted over \$4,000,000 of capital from the Lake Superior district. The confidence of investors who understand copper mining is the strongest proof of the value of a district. Some of the richest mines in the Bisbee district have been developed by capital from the older copper-mining regions of the United States.

The growth of copper mining during the past year has been marvelous. The Calumet and Arizona mine in Cochise County is a good example of the rapidity of progress in copper mining. The first furnace of this company was blown in November 1, 1902, and during the following eighteen months the net earnings were at the rate of \$2,000,000 a year. This is one of the mines that has come into prominence within a very short time.

Among the new producers of copper might be mentioned the Shannon, in Graham County; the Troy, in Pinal County; the Black Diamond, in Cochise County, and numerous others. There are many small shippers throughout the Territory, the ores going to New Mexico, Colorado, and Texas smelters for reduction. The quantity of bullion produced from these shipments can not be ascertained.

In the table presented herewith, showing the production of copper from 1880 to 1904, the smaller shippers and smelters are scarcely considered during the later years. No doubt the total output is far greater than these figures show, owing to the uncertain manner in which the statistics are compiled. At any rate, there has been produced in this Territory during the past twenty-five years fully \$158,000,000 worth of copper, placing the average price of that mineral at 10 cents a pound, which is exceedingly low.

The statement following shows the production of copper in Arizona by years from 1880 to 1904:

*The production of copper in Arizona.*

Year.	Quantity.	Year.	Quantity.
	<i>Pounds.</i>		<i>Pounds.</i>
1880 <sup>a</sup> .....	2,000,000	1894 <sup>b</sup> .....	44,531,108
1881 <sup>a</sup> .....	5,000,000	1895 <sup>b</sup> .....	48,329,403
1882 <sup>a</sup> .....	15,000,000	1896 <sup>b</sup> .....	73,745,321
1883 <sup>b</sup> .....	23,874,963	1897 <sup>b</sup> .....	81,019,922
1884 <sup>b</sup> .....	26,734,345	1898 <sup>b</sup> .....	100,000,000
1885 <sup>b</sup> .....	22,706,366	1899 <sup>c</sup> .....	133,054,860
1886 <sup>b</sup> .....	15,657,935	1900 <sup>c</sup> .....	118,317,764
1887 <sup>b</sup> .....	17,720,462	1901 <sup>c</sup> .....	130,778,611
1888 <sup>b</sup> .....	31,797,300	1902 <sup>c</sup> .....	119,944,944
1889 <sup>b</sup> .....	31,586,185	1903.....	150,000,000
1890 <sup>b</sup> .....	34,796,689	1904 <sup>c</sup> .....	230,000,000
1891 <sup>b</sup> .....	39,873,279		
1892 <sup>b</sup> .....	38,436,079		
1893 <sup>b</sup> .....	43,902,824		
		Total production since 1880 (8 years' product unknown) ..	1,578,697,560

<sup>a</sup>The figures for 1880, 1881, and 1882 are from Patrick Hamilton's "Resources of Arizona."

<sup>b</sup>From 1883 to 1898 are from the tables given in Mineral Industry, vol. vi, Science Publishing Company, New York.

<sup>c</sup>From 1899 to 1902 from the tables given in Stevens' Copper Hand Book, 1903 and 1904 being estimated upon the production of the larger mines of the Territory.

Although the figures are not at hand, I have no hesitancy in stating that Arizona is now entitled to second place in the production of copper in the United States. The coming year gives promise of augmenting the production many millions of pounds. The Imperial Copper Company may be among the new producers, the Twin Buttes promises to add its quota to the supply, and the Troy, in Pinal County, will no doubt be active as a producer. In Cochise County many mines are being equipped for active production, and the older works will be pressed to their utmost capacity. In a very short time Arizona will become the leading copper region in the United States. Montana depends on the production of its old mines, very few new ones coming into existence each year, while in Arizona there are new works erected each year in the copper districts, adding to the supply of copper bullion.

If Cananea, virtually dependent upon Arizona in the development of its resources, could properly be included, Arizona would rank first in copper production. This mine is owned by an Arizona man, Col. W. C. Greene, and this Territory has been called on in many ways in the operation of the property. Cananea is located but a short distance below the line in Mexico.

A number of smelters have been erected in different parts of the Territory, and thousands of companies are carrying on operations which are at present in the prospective stage. The shipment of copper ores has increased wonderfully during the past year.

The Imperial Copper Company, one of the new operators in southern Arizona, is carrying on extensive exploitation, having connected their property by rail with the Southern Pacific. The shipment of ores will begin September 1, when the railway is completed. Two double compartment shafts have been sunk about 2,000 feet apart and to depths of 350 and 400 feet. Drifting has been prosecuted from these shafts, 150 men being employed in the development work.



## GOLD AND SILVER MINING.

It was gold that first attracted Europeans to the southwest, and gold led the Jesuit fathers to this rich land during the seventeenth century. Surrounding the old missions workings were discovered that left no doubt as to who were the pioneer miners of Primeria Alta, the name by which Arizona was then known. The first rush to the new land began in 1736, when silver and gold was found in large quantities near what is now the border line of Sonora and Arizona. Prominence was given to the discovery in Spain by the confiscation of a nugget which the King claimed as a curiosity.

The European invasion of Arizona began in 1853, ten years before this Territory was separated from New Mexico, and became a separate subdivision. The first explorers scratched the surface, picking up the nuggets. It was these nuggets that spread the fame of this region as a gold country. Rich Hill, in Yavapai County, was one of the first discoveries. It was found by Pauline Weaver's party in 1863, yielding untold wealth to the hardy pioneers who braved the dangers of the frontier in search of it. What the production of gold has been in all the years passed no one knows.

Silver was discovered about the same time, each year adding to the riches of the new country as the pioneers ventured farther and farther into the wilderness. The discovery of the Tombstone mines in later years increased the interest in silver mining. From 1879 to 1882 Arizona jumped from seventh in the list of gold production to third place. The production of gold in 1879 was \$1,942,403; in 1882 it was \$9,298,267.

The demonetization of silver started the prospectors in search of new metals, and copper gradually became king. Gold and silver have yielded fortunes, but copper to-day stands at the head of the list in wealth productiveness.

There are many substantial gold-producing mines in this Territory. Yavapai County probably leads in gold, with Yuma second. Among the leading mines which are now active producers may be named the Octave, McCabe, Henrietta, Congress, O'Brien, Model, Braganza, Alto, Chaparrel, Bannic, Burlington, Leland, Bunker Hill, Poland, Old Mesa, Cypress, Dividend, Little Jessie, Eureka, Evening Star, Jim Crow, Kinney group, Oriental, Lottie, Gold Note, Stark, Petaluma, Coronado, Keystone, Kennedy group, Octopus group, White, Pfau, Cornucopia, Buffalo, Gold Lode, Lion, Gold Link, Hillside, Thorne, Alma, Cash, Gillespie, Senator, Eagle Tail, Cadillac, Lincoln, Mohawk, Old Reliable, Tiger, Oro, Rapid Transit, Corono, Bodie M., Hudson, Pine Mountain, Hise Exploration Company, Planet-Saturn, Braganza, Buckhorn, Catocin, Butternut, Gold and Copper consolidated mines, Golden Link, Golden Rule, Lelan, May group, Monica, Monte Cristo and Hidden Treasure, Palo Alto, Tiger, Victor, Crown Point, Treadwell mines, and many others.

The Octave has produced more than \$2,000,000 during the past four years of active operation. It is regarded as one of the permanent gold producers of the Territory. Eight miles of development work have been completed, the shafts attaining depths of 500, 1,450, and 1,600 feet. This camp is located about 12 miles from Congress, and has a population of about 500. In the same vicinity are numerous gold mines of great promise.

Yuma County contains a number of rich gold mines, among them the Fortuna, King of Arizona, and Harqua Hala. These mines have been constant producers for many years. At Quartzite there are 10 companies operating mines. The Rich and Darling are among the leaders in active operation. A 160-ton stamp mill has been contracted for by O. A. Pease, who is carrying on extensive operations. Many other properties are being equipped in Yuma County. At Empire Flat, Castle Dome, Gila City, Harrisburg, and at many other points, large operations are progressing satisfactorily. It is impossible to give in detail the mines now in operation, as reports are hard to secure. Yuma County has progressed during the year in gold mining, and is maintaining its place among the leading gold counties in Arizona.

The Oro Grande is one of the leading gold mines in Maricopa County. Although a new camp, it has progressed rapidly, and the development has been active and successful. The Relief mine near Phoenix has received a great deal of attention and is well developed. The Vulture mine is one of the oldest gold mines in Arizona, having produced millions of dollars during the years of active operation. Among the other mines in operation are the White, Turkey Creek, Standard Dollar, Socorro, Pikes Peak, Mineral Hill, Lime Creek, Leviathan, Grijalva, Goldfield, Golden Rule, Gold Coin, Eddy, and Ben Hur.

In the White Tank, Castle Creek, Black Rock, and other mining districts, there has been the usual activity during the year, a large number of mines having shipped ores to smelters.

Pinal County has some gold mines of great value, the Mammoth ranking among the first in the Territory. Although copper predominates as a source of wealth in Gila County, yet there are numerous gold mines of value there. Pima contains a number of gold mines of promise, and in Graham and Santa Cruz there are many mines from which shipments are made during the year. In Cochise County the Commonwealth is famous as a producer of gold and silver, and operations are carried on at many other points in that rich county. Mohave County has some of the best gold mines to be found in the Territory. Operations are conducted throughout the year with success. Gold is also found in Coconino County.

The production of gold in Arizona was, approximately, \$6,850,000 during the past fiscal year. La Fortuna, one of the chief gold mines, did not produce much during the year, owing to improvements being made in the mine, and the Mammoth, one of the largest gold producers in the southwest, was idle owing to litigation. The Commonwealth, at Pearce, also suffered some from accident to its workings, shortening its production of gold and silver somewhat.

The King of Arizona produced about \$350,000, this being one of the younger mines of the Territory, although fast becoming a substantial one. It has been brought into the list of producers under the most adverse conditions, being located in the heart of the desert, without water and fuel. The gold and silver bullion produced and shipped to the mints by express could not be ascertained through Wells, Fargo & Co.'s express agencies, a source heretofore depended on for this information, hence it is impossible to more than approximate the output. However, even with the figures submitted by the express company, there would not be included the shipments of gold and silver



bearing ores to the smelters nor the production of these metals from copper ores where they appeared as a by-product.

The silver and lead produced was in the neighborhood of \$2,000,000, which, with the gold production of \$6,850,000, gives the total from the yield of gold, silver, and lead, \$8,850,000. Giving an average value to copper of 13 cents per pound and placing the total production in the Territory at 230,000,000 pounds, as heretofore given, the value of copper was \$29,900,000. The total value of copper, gold, silver, and lead was \$38,750,000.

#### GEOLOGY OF ARIZONA.

In connection with mining development in the Territory during the year, I wish to call attention to the report of geological conditions as presented by the Territorial geologist:

The Territory of Arizona, with an area of 113,000 square miles, is a most inviting and interesting field for a geologist. Stretching from Mexico on the south to Utah on the north, from New Mexico on the east to California on the west, and lying between the parallels of 31.30 and 37 degrees, and the meridians of 109 and 115 degrees, it has a most diversified surface, climate, fauna and flora, and an extraordinary variety and wealth of mineral productions. The geologic conditions are equally varied. Every period of the world's history since the dawn of life is here represented as an open book, so that "he who runs may read." The pages of the rocky record are beautifully illustrated by the "medals of creation," and these are often changed from calcareous shells to enduring crystal, as if designed to more fully preserve and elucidate the record and invite the study of the evolution of organisms.

The Territory not only affords rich and undescribed material for the paleontologist, but for the zoologist, botanist, climatologist, and for the ethnologist and archaeologist. The history of humanity may here find a most interesting field of study in tracing and illuminating the course of exploration since the early Spanish prospectors and adventurers followed down the River of the Holy Cross (the Santa Cruz) and began the development of the silver-bearing lodes of Tumacacori and the Salero, before the settlements on Massachusetts Bay were firmly established.

The Territory, topographically, presents two great divisions—a plateau region on the north, made up of approximately horizontal strata, and the mountainous region on the south, consisting of uplifted strata plicated and folded with intrusive rocks and mineral veins. These mountain ranges are numerous and have a general northwest and southeast parallelism, with intermediate broad valleys formed by the intersection and blending of wide and gradual slopes, generally consisting of the wash and débris from the mountain ridges. These slopes, often 20 and 30 miles in breadth, presenting a very regular and even sky outline of only a few degrees of inclination, are a remarkable scenic feature of the mountain division, picturesquely comparable with the Great Plains or the horizontal mesas of the northern division.

Two great rivers, the Colorado and the Gila, with their tributaries, drain the greater part of the Territory. The Colorado is comparable with the Nile of Egypt. Like the Nile, it has its period of overflow and deposition of fertilizing alluvions. It flows through a semidesert region which blossoms as the rose wherever touched by its waters.

A large portion of the Territory is practically unexplored, and there are considerable areas of which nothing is known, not even the topography. In any attempted sketch it is thus impossible to do more than to touch upon some of the more salient features of the geology which have been more or less observed and studied.

The Territory has within its borders the most stupendous and magnificent canyon of erosion in the known world. In the days of the early explorers, Simpson in 1851, Whipple in 1853, and Beale in 1857, and for many years after, it was comparatively inaccessible and its secrets were hidden from the world; but since the daring and successful descent of the river by Major Powell, the Great Canyon of Arizona has become the Mecca of geologists and a new and rich revelation of the history of the globe.

This canyon was formed under peculiar conditions of erosion. A large water supply derived from melting snow and rainfall on distant ranges of mountains here found its way across a broad plateau country of horizontal strata in a comparatively rainless region, or at least where the precipitation was not sufficient to form tributary



streams by which the banks of the main stream could be broken down. Lateral canyons are rare.

Throughout southern Arizona there has been enormous erosion of the mountain ridges with corresponding great filling in of the valleys; and in these valleys, as, for example, in the San Pedro, wherever flowing water has existed there has been great transportation of material onward toward the Gulf. It is evident that in a comparatively recent period the rainfall was much greater than now, and that the streams ran with larger volume and power. There appears to have been a gradual desiccation which, however, is not confined to Arizona, but is world-wide and cosmic.

The existence of heavy beds of coarse conglomerate in numerous localities near or at the base of the Paleozoic strata show that in those remote periods there were shore lines and island-like ridges rising above the primeval ocean. These were the beginnings of Arizona land, which is thus shown to be ancient and insular in origin.

*Pre-Cambrian.*—Archean pre-Cambrian formations are found throughout Arizona, but are specially prominent in the mountain region from the Yuma ranges, bordering the Gulf of California to and including the Bradshaw Mountains. These last are upon the main axis of uplift, trending diagonally and centrally across Arizona from the great bend of the Colorado River, in Mohave County, toward the southeastern corner of the Territory. Besides the compact massive granites, there are large areas of gneiss, mica slates, and of clay slates, probably the equivalents of the formations known as Laurentian and Huronian, and also as Algonkian.

Rocks are extensively developed in the Graham Mountains and in the Catalina Mountains (formerly known as the Caterina Mountains), north of Tucson.

The rocks on the south side of the Catalinas are gneissic, in tabular form, and in great thickness.

On the northeastern side there is an extensive development of finely lamellar even-grained mica schist, showing very sharp plications so as to give a zigzag outcrop. These slates I have referred to the Huronian under the provisional titles of the Arizonian.<sup>a</sup> Similar mica schists occur in Pinal County, near the Silver King mine, where they are traversed by a great number of quartz seams and veins, which partake of the sharp folding. These rocks are lithologically similar to the mica schists of the region of Harney Peak in the Black Hills of Dakota and to portions of the Taconic Mountains in Massachusetts. Metamorphic limestone also occurs in the Catalinas in the form of white crystalline marble of good quality.

The Fortuna mine in the Gulf range near Yuma is in ancient mica slates, and the veins of lead ore of Castle Dome traverse gneissic and slaty rocks.

An extensive region of argillaceous slates is found upon Cave Creek north of the Phoenix mine. The outcrops are strong and bold, and in some places are so even and tabular as to merit the name of roofing slate.

Similar slates occur in the region between Walnut Grove and the Tiger mine in Yavapai County, and again on the eastern side of the Rincon Mountains, about six miles north of Dragoon Summit station and in close relation with the gneissic rocks in which the quartz veins carrying wolframite occur.

Ancient gneissic rocks occur in the Oro Blanco gold district and on the border of Mexico at and near Sasabi on the road from Tucson to El Plomo.

The great copper mines of the United Verde are upon lenticular, interstratified, pyritic beds and seams in ancient slates.

Pre-Cambrian rocks are well developed in the canyon of the Colorado underlying the Tonto sandstone, which is regarded as Cambrian. The Grand Canyon series of Powell, consisting of the Chuar and Unkar beds, are referred to the Algonkian, and they rest unconformably upon the Vishnu series.<sup>b</sup>

*Cambrian and Silurian.*—The best known and identified terranes of these two remote periods are found in the canyon resting upon older rocks unconformably.

The Tonto sandstone is referred to the Cambrian. The existence of a thick series of strata underlying the Devonian beds conformably in the Santa Ritas and on the flanks of the Catalina Mountains at the northeast justify the belief that the Silurian and the Cambrian are there represented, though as yet no fossils have been found by which the age of the strata can be positively determined.

There are many localities in Arizona of metamorphic sandstone, now quartzite, resting against a granitic base which probably should be referred to the Cambrian.

*Devonian.*—A well-defined horizon of the Devonian occurs on the northeastern slope of the Catalina Range a mile or so east and south of the Southern Belle gold mine, on a long ridge extending eastward, which I have named Coral Ridge. The

<sup>a</sup>Vide report to the governor of Arizona for 1901, pages 109 to 110. See also report on the Silver King mine.

<sup>b</sup>See C. D. Walcott in Report U. S. Geological Survey, XIV, p. 507.

outcropping edges of a coral reef give fine specimens of coral and some brachiopods. This reef occurs in the midst of a considerable thickness of a series of limestone, argillaceous limestone, and quartzite, uplifted and conformable with heavy underlying quartzites and red shales.

Another locality near Greaterville in limestone of the Santa Rita Range affords *Spirifer hungerfordi*, *Atrypa reticularis*, *Bellerophon*, and the coral *Acerularia davidsoni*.<sup>a</sup> These strata are standing nearly on edge.

**Carboniferous.**—The rock formations of the Carboniferous era are broadly and extensively developed in Arizona. The horizontal edges are exposed in the Grand Canyon and elsewhere, while in southern Arizona they are generally uplifted and plicated. The existence of Coal Measures with beds of inferior graphitic anthracite is discussed in the report for 1901, where it is shown that graphitic anthracite occurs in thick seams in the Chiricahua Mountains and that small quantities of coal have been found in the San Carlos region. Since then Mr. Mellor, an enthusiastic observer, has sent in some fossils of the Carboniferous era from a limestone bed directly below and conformable with shales supposed to contain coal seams, but from a point near the San Pedro Valley, several miles west of the San Carlos beds. These formations invite a careful investigation.

Thickly bedded limestones of dark color and of Carboniferous age crop out in the mountains west of Tucson. The limestones and shales at Tombstone, in connection with the deposits of gold and silver ore, are referred to the Carboniferous. It is an interesting fact that the veins are most productive at the points where they intersect the limestone, and that the flats or blanket deposits, consisting of lateral enrichments or overflows from the vein fissures, generally follow the limestone and chiefly in the tops of the anticlinal folds or saddles, pitching downward with the axis of such folds away from the veins.<sup>b</sup>

The great copper deposits of the Copper Queen at Bisbee, which occur in the limestone, may be regarded as similarly formed by replacement of the Carboniferous limestone, the original source of the solutions being in the adjoining Plutonic rocks.

Rocks regarded as of equivalent age and formation occur at the Cananeas, and again at the Azurite near Tucson, at Clifton, and at Helvetia and Rosemont. So also at the Silver Bell and other camps, notably at Snyder's claims near Dudleyville. The limestone thus reserves the title of *metalliferous limestone* sometimes applied to it. Silver ores have been taken from the limestone butte west of Tucson on the Quijotoa road, known as Snyders Mountains. Similar black limestones occur at the Total Wreck mine, and pyritous ores are in association with it.

**Mesozoic.**—No fossil remains of the Secondary have yet been found in southern Arizona, but the stratigraphic relations and lithological character of extensive deposits of red sandstone justify the belief that the Trias is well represented. Such sandstones are found north of Phoenix, Tempe, and Mesa, in the Salt River Valley, and again on the southern side of the Bradshaw Mountains at Castle Creek. East of Tucson, near Vails Station and Pantano, on the railway between Tucson and Benson, there are red sandstones and shales which are probably Triassic, and a prolongation of the broad area of red sandstones and shales between the Whetstone Mountains and the Santa Ritas extending southward toward the Huachuca Mountains, and exposed along the railway from the San Pedro Valley to Crittenden.

There is also a wide area of red beds between Oracle and the San Pedro at Old Camp Grant which are not conformable to the uplifted quartzite, limestones, and conglomerates. It is well known that the Trias is largely represented south of the international boundary line in Sonora. Extensive beds of red sandstone and shale there stand on edge and attain a great thickness.

Auguste Remond has shown that Triassic rocks are extensively developed in western Sonora, Mexico, and that the Cretaceous is found in the Sahuripa Valley.<sup>c</sup>

The great and well-defined gold and silver bearing quartz vein of the Commonwealth mine at Pearce, in Cochise County, is probably in Secondary rocks associated with andesitic intrusions and breccias.

For descriptions of the Secondary formations of the plateau region reference is made to the reports and descriptions by Powell, Dutton, Walcott, and others of the United States Geological Survey.

The following, relative to the little-known region of the Carriso Mountains, in the extreme northeastern portion of Arizona, is from a report by Professor Hayden.<sup>d</sup>

<sup>a</sup> See report to the Governor of Arizona, 1901, p. 110.

<sup>b</sup> Vide Tombstone and its mines, by W. P. Blake, New York, 1902.

<sup>c</sup> Proc. California Academy of Sciences, May, 1864, p. 153, and also p. 252, March, 1866.

<sup>d</sup> Hayden Annual Report, 1875, p. 274-276.



These mountains were examined by Holmes in 1875 and again by Cross,<sup>a</sup> who described the group as differing from the other groups of the plateau country in being "rather a remnant of an isolated plateau than a cluster of peaks." The average elevation of the table-land is about 9,000 feet and Pastora Peak, the highest point, reaches but 9,420 feet. The area is about 50 square miles. It is deeply cut into by erosion on all sides, as well shown by a panoramic view, Pl. XIV, of the report cited. Escarpments of mesas bordering Navajo Creek and its branches present abrupt slopes. The topography is comparable with that of the El Late Mountain group, 25 miles northeast, in the southwestern corner of Colorado.

The peculiar mesa structure is due to the hard, unyielding nature of the intrusive igneous magmas which lie between the nearly horizontal sedimentary beds of secondary age. Holmes says: "The masses of trachyte were not found over the surface of the country, but lodged between the sedimentary strata producing a more or less symmetrical doming of those beds that were not penetrated." Red sandstones were observed interbedded with sheets of trachyte, and Cretaceous beds were recognized. Cross described the igneous rocks as hornblende porphyrites almost identical in character with those of the El Late group, and closely allied in their structural relations, at least with those of the Henry Mountains. He regards them as thick sheets rather than laccolites, a form "no doubt connected with their occurrence in sandstones of the Trias or Jura, in firm bedded rocks."

*Tertiary and Quaternary.*—The great mammals once roamed over the surface of Arizona. This is attested by finding their remains at different distant places. The skull of an elephant was exhumed near Yuma, and is now in the Territorial University Museum at Tucson. Two finely preserved molar teeth of the mastodon were found in the peat of the large spring at Andrades rancho; another was dug up at Fort Bowie. At Greaterville, on the east side of the Santa Ritas, the horn cores of a gigantic species of *Bos* were dug from the placers. These cores are massive and long, indicating an animal of unusual size and breadth or spread of horns. Such fossils indicate the former presence of a much more extended and varied vegetation than now exists, and a much greater rainfall.

There are also evidences of extensive lakes in the Pleistocene period. The valley of the San Pedro exhibits a great thickness of horizontal lacustrine clays, generally of red color, extending from near the Mexican border on the south northward to and beyond Benson, on the Southern Pacific Railroad, where they are cut through by the river to a depth of 600 feet or more. An artesian boring in the bottom of the valley penetrates these sediments 500 feet deeper, giving a thickness for the deposit of over 1,000 feet.

Below Benson there are interstratified with these red clays extensive deposits of snow-white volcanic ash mixed with the siliceous shells or frustules of diatoms. This diatomite has been described by me,<sup>b</sup> and figures of some of the more interesting species are given in the Transactions of the Wisconsin Academy of Science. It is the opinion of Dr. D. B. Ward, of Poughkeepsie, an authority on these microscopic forms, that they represent marine conditions, or at least that most of the forms are marine. It therefore seems probable that estuarine conditions existed at a late period, a view sustained by the absence of any decided barrier to the inflow of ocean water in case of a subsidence of the region.

The detrital deposits around the mountain ranges, of which mention has already been made, are developed upon a grand scale in southern Arizona, and may be regarded as subaerial deltas, the result of the outpouring floods from the canyons and arroyos of the mountains, chiefly during a period of much greater rainfall than we now have.

The rich alluvions of the chief rivers of the Territory should here be mentioned, especially those of the Gila and Salt rivers, of the Colorado, the Santa Cruz, and the San Pedro or Quiberis.

All these valleys give evidence of streams of former greater volume than they now have. And yet it is found that wherever irrigating ditches or the cutting of roads or traveled paths extend across these alluvial areas, the cutting power of the streams is exerted with disastrous effect, hundreds of acres of fine farming land often disappearing by cutting away during a single flood. This is particularly noticeable along the San Pedro and the Santa Cruz, where wide river channels now exist in former cultivated fields.

The extreme fertility of the alluvions of Arizona is not so surprising when we reflect that they are derived from about every known variety of rock formations, granitic, plutonic, volcanic, and sedimentary.

<sup>a</sup> Fourteenth Annual Report U. S. Geological Survey, part 2, p. 209.

<sup>b</sup> Trans. Am. Inst. Min. Engrs., May, 1902.



Interesting experiments and observations have been made upon the silt-carrying capacity of some of the Arizona streams by Professor Forbes, director of the United States experimental station at the University of Arizona. The wonderful fertilizing effects of overflow by silt-laden streams are shown in a strikingly convincing way.<sup>a</sup> The great fertility of the Colorado delta is, however, well known by its productions, which surpass in luxuriance and variety those of any other known equal area in the United States. This fertile area becomes the more prominent by contrast with the surrounding desert conditions.

On the lower part of the Colorado River at Yuma there are high banks of ancient loess-like alluvions far above the present reach of the floods.

*Granite.*—The localities of granite are numerous throughout Arizona. There is, however, one broad central area of coarse-grained porphyritic granite, generally gray in color with soda feldspar which weathers freely and leaves large blocks and boulders of disintegration upon the surface. Petrographically it much resembles the typical granite of Belihen in the Vosges. This granite is found in the Santa Rita Mountains at Helvetia; in the Huachuca Mountains on the east side facing the San Pedro Valley; in the Santa Catalina range at the northern end at and around Oracle, from which it extends northward to Mammoth and beyond it toward Riverside, the Superstition Mountains, and beyond them to the Salt River east of Florence. It underlies the tufas and lavas of the Gila Buttes at the head of the Florence Canal. Throughout this extended area it presents, generally, a broad, flattened surface, the result, probably, of disintegration, and does not rise in peaks or needles. It is the foundation rock of the area mentioned. It is overlaid by the ancient conglomerates, quartzites, and limestones of the Palaeozoic series. It is probably post-Carboniferous in age. Another outcrop of similar granite is found at Yuma.

In the gold fields area, Superstition Mountains, where important gold-bearing quartz veins have been worked, this granite includes belts and patches of ancient sediments, such as quartzites and limestones, dislocated, broken, and detached from the main bodies of their formations and much metamorphosed by inclusion in the granite magma.

West and north of Oracle the granite is characterized by quartz veins traversing it, carrying crystals of black tourmaline, schorl, thus showing boracic emanations or segregations. So far no tin ore has been found. There are, however, argentiferous and auriferous quartz veins. The extended granite area of the Prescott region is formed of granite of a somewhat different composition. At the point of rocks on the railroad north of Prescott the granite rises in sheets and pinnacles, giving a peculiar and picturesque topography.

In the Tombstone area the eruptive rock generally known as "granite" is more accurately described a granodiorite. It is a very compact gray rock of medium grain which weathers in such a way as to leave large globular masses or boulders of disintegration, confusedly piled on the surface. These make excellent building blocks and the rock has been used for the foundations and pillar blocks of the heavy hoisting and pumping machinery at the deep shaft of the Consolidated Tombstone Mines Company on Contention Hill. It was also used for the large monument erected over the tomb of Scheffelin, the discoverer of Tombstone. The picturesque granite area northeast of Tombstone in the Dragoon Mountains known as "Cochise's Stronghold" is another outcrop on a large scale of similar granodiorite.

There is a fine development of light-gray colored granitic rock near Deeples Valley. The boulders of disintegration are very large and are picturesquely embowered in oak trees.

According to Whipple's survey in 1853 granite is found at the southern base of the great extinct volcano, San Francisco Mountain. Mr. Marcou called it a great mountain of red scientific rock. Many other localities are given. The underlying rock at the base of the Aztec Mountains is granite. This is overlain by sandstone and limestone. An abundance of granite and gneiss is found in the Aquarius Mountains; so also in the Cerbats.

The rocks at Castle Dome, where lead ore and fluor spar are mined, are compact, fine-grained mica and clay slates standing nearly on edge and traversed by numerous compact chocolate-colored porphyritic dykes, or intrusions, which apparently bear a close relation to the mineralization.

*Plutonic and volcanic.*—There are two chief centers of the exhibition of the phenomena of volcanoes on a grand scale. One is in the plateau region, the other in the extreme southwest. The plateau is dominated by a group of extinct volcanic cones, from which, at a remote period, vast volumes of flowing lava were poured out. San Francisco Mountain, a few miles north of Flagstaff on the Atlantic and Pacific Rail-

<sup>a</sup> See Bulletins of the Agricultural Experiment Station, Tucson, 1902-1903.

way, is a cone of vast dimensions, reaching a height of over 10,000 feet, and mantled with snow above the forest line for a great part of the year. An annular succession of peaks marks the rim of a former gigantic crater. It is a conspicuous and magnificent mountain as seen from any direction, especially from the Bradshaws, near to Prescott. It was a landmark for Whipple's overland survey in 1853, as for others making their way westward through the great Coconino Forest. Whipple gives a lithographic view in his report (p. 80), and notes that it rises at least 5,000 feet above the surrounding plateau. A description is also given in the report on the geology of the route (p. 46, Vol. III, of Pacific Railroad Surveys).

Bill Williams Mountain is another extinct volcano of great size, about 40 miles southwest of San Francisco Mountain. The lava from this mountain was traced for 20 miles or more west of the peak by Whipple's survey.

Whipple, or Cygnus Mountain, in a line of elevations some 12 miles in length, west of the Aztec Mountain, consists of volcanic rock and granite. These are the sources of great lava streams, which occupy a great part of the surface between the Aztec and Aquarius mountains.

In the extreme southwestern part of Arizona there are extensive evidences of former great volcanic activity, such as the lava fields crossed by the Southern Pacific Railway at and near Mohawk station, and the mountain ridge known as Malpais, extending into Sonora, and possibly connected with the great extinct volcano there known as Pinacate, near the head of the Gulf of California.

All these lava flows and volcanic cones are geologically of comparatively modern date, but other and very ancient lavas are known and are buried under the deposits of geologic ages, but are revealed to us by the cutting out of the formations by the Colorado River.

The pre-Cambrian igneous rocks of the Unkar Terrane, Grand Canyon of the Colorado in Arizona, have been studied and described by Prof. Charles D. Walcott,<sup>a</sup> who observes that—

"Rarely has the geologist an opportunity to study such a series of contemporaneous interbedded igneous rocks as that dissected and laid bare in the wall of the Grand Canyon."

These rocks were first observed by Major Powell, who wrote:<sup>b</sup>

"This region of country was fissured and the rocks displaced so as to form faults, and through the fissures floods of lava were poured, which, on cooling, formed beds of trap or greenstone. This greenstone was doubtless poured out on dry land, for it bears evidence of being eroded by rains and streams prior to the deposition of the overlying rocks."

The igneous rocks were also noted by Captain Dutton, who saw them where the comparatively narrow gorge of the Marble Canyon expands well out into the much ampler width of the Grand Canyon. The location is described by Professor Walcott as in northern Arizona, between 35° 57' and 35° 17' north latitude and between 111° 47' and 112° west longitude. Altogether there is about 18 miles of exposure of the outcrop of the lava beds, exclusive of the lower beds. In a preliminary note the beds were described by Walcott as follows:

"The summit of the Grand Canyon group is a massive magnesian limestone 100 feet in thickness that overlies red sandstone resting on a massive belt of greenstones 1,000 to 1,300 feet in thickness. This belt is broken up into eight principal flows by partings of sandstones deposited between the flows. The first coulée flowed over the level ocean bed, in which 5,000 feet of sediment, that now forms a reddish-brown sandstone, had accumulated on the upturned and eroded edges of the Archean, the few layers of limestone and the one flow of lava 150 feet in thickness near the base scarcely serving to break the great sandstone series."<sup>c</sup>

In his later monograph he writes "all of the igneous rocks appear to have come from true fissure eruptions. In the upper portion of the Unkar terrane the lava flowed out in successive sheets, a sufficient period of time intervening between the larger flows to permit of the accumulation of from 3 to 5 feet of sand on the surface of the various flows."

Volcanic ejections in the form of tuffs and lava are common in various parts of the Territory. See under the heading of "Tufa."

<sup>a</sup> Fourteenth Annual Report U. S. Geological Survey, p. 503.

<sup>b</sup> Report of Explorations in 1873 of the Colorado of the West and its Tributaries, 1874 (8°), p. 18; Exploration of the Colorado of the West and its Tributaries, 1875 (4°), pp. 81, 213.

<sup>c</sup> Pre-Carboniferous strata in the Grand Canyon of the Colorado, Arizona, Am. Jour. Sci., Vol. XXVI, 1883, pp. 440, 441.



Rhyolites are also abundant, especially in the central portion of the Chiricahua Mountains and in the Galiuro range between the two great granitic and metamorphic ranges of the Catalinas and Rincons and the Graham Mountains.

Plutonic intrusions in the form of dikes of porphyry diorite and diabase are numerous throughout Arizona, and are generally accompanied by the familiar phenomena of alteration of the rocks which they traverse. Thus, at the Azurite copper mines, near Tucson, and at the Olive camp, the dark-colored "blue" limestone is changed to white limestone adjacent to the dikes, with at the same time the formation or development of garnet rock and copper sulphides. Similar conditions are well shown at the copper-ore croppings, near Dudleyville and at Mineral Creek.

The great porphyry dike traversing the Paleozoic strata at Tombstone, forming, in connection with quartz, the great lode of the district, cuts the strata in a nearly vertical plane and is highly mineralized with gold and silver. Other dikes in the district also show a close relation to the mineralization.

The copper-ore supply of the Arizona Copper Company at Clifton is now drawn chiefly from the great porphyry dike, which was doubtless the source of the lateral enrichment of the adjacent limestone by supplying solutions of copper which were promptly precipitated on coming in contact with the soluble rock.

*Tufas or tuffs.*—Formations coming under this designation are abundantly developed throughout Arizona, especially near Tucson and Phoenix and on the Sonoyta and Upper Santa Cruz River from Calabasas to Nogales.

These rocks are used for building, and are particularly described in the report for 1899, to which reference is made.

*Wind erosion.*—The high winds upon arid plains drive clouds of dust before them, especially where the surface has been broken up by travel with the formation of roads and loose earth. A large amount of material is thus transported from place to place, and where there is loose sand, and the conditions are favorable, sand dunes are formed—as, for example, upon the Colorado Desert across the Arizona line in California—but they are not common in Arizona.

The attention of travelers upon the desert bordering the Great Colorado of the West is often arrested by broad stretches of pebble-covered plains, or mesas, glittering in the sunlight from the myriads of polished surfaces, giving at a distance the appearance of a sheet of water. It is not alone the well-rounded, polished surface of these pebbles which commands attention, but, in addition, their nearly black or dark-brown color, and, above all, their uniform distribution in a level sheet, covering the plain in a continuous layer or pavement like a vast mosaic without sand or soil. Hundreds of square miles along the Lower Colorado, especially in Yuma County, Ariz., and on the borders of the Colorado Desert in California, are thus covered. It is evident that the former extent of such pebbly plains was much greater than now, for the continuity of the mesa is broken into by the numerous dry arroyos or "washes" formed during exceptional showers or deluging rains.

In some places there is an underlying bed of pebbly conglomerate—a mixture of pebbles and sand; in others the pebbles rest on a sandy, earthy foundation. The rounded pebbles are distinctly alluvial in origin, and pertain to the ancient Colorado drainage system; but it is not comprehensible that such regular layers of polished pebbles could have been left by subsiding floods or river action.

Attention was early directed by me to these remarkable plains, first examined in 1853, when exploring for the United States and seeking a practicable route for a railway to the Pacific coast.<sup>a</sup> The cut and polished surface of the pebbles and of loose rocks on the desert was then correctly explained as due to the attrition by wind-driven sand and dust, but an explanation of the pavement-like surface and the accumulation of pebbles and rock fragments in close contiguity was not attempted.

It appears certain that the surface sheet of pebbles, and in many localities of small fragments of rock and bits of fossil silicified wood, is the result of an accumulation by the gradual removal by the wind of sand, silt, or finer materials from around and below the pebbles, undermining them, removing their support, and permitting them to fall to a lower level, where they accumulate by concentration until the whole surface is closely covered by fragments too large and heavy to be moved away by the wind. Such a deposit of pebbles or fragments may thus represent all that were originally distributed through several feet of thickness of sand and lighter alluvions. In this way there may be a removal of a large amount of fine materials from the general surface of a region, lowering its level until by the complete covering and protection of the surface by the concentration of the heavier fragments æolian denudation is arrested and the further lowering of the surface is stopped.

<sup>a</sup> Report of a Geological Reconnaissance in California, Vol. V, Pacific Railroad Reports, pp. 108, 112, 117.



## CONDITION OF LIVE STOCK.

During the past year the climatic conditions obtaining throughout the Territory of Arizona have been peculiarly unfavorable to the stock raiser. The long-protracted drought, covering a period of about nine months, resulted in a general shortage of range feed, and in the irrigated districts precluded the possibility of raising the necessary crops of artificial grasses demanded by the feeders. Losses on the ranges have been heavy, but the results could not be otherwise, considering the abnormally large yield of calves during the preceding year.

The law governing and regulating the handling of live stock, which was enacted in 1903, and to which casual reference was made in last year's report, has demonstrated the wisdom of the legislature that enacted it. Its operation has brought about a condition of security and confidence such as has never before existed, and to a great extent offsets the losses in other directions.

The system of inspection for health and for brands and marks has been brought up to a high standard of efficiency, and while improvements can still be made, the progress in this direction has been phenomenal.

The law is administered as in the past by a board consisting of three members, all of whom are practical cattlemen. An office is maintained in the capitol at Phoenix, where all records are kept; a secretary and such other assistance are employed as are necessary for the proper conduct of the office.

The Territory is divided into forty inspection districts, each of which is in charge of a competent cattleman, and as many deputies are employed as are necessary to attend to the work of inspection, the number varying from 80 to 100 to meet the conditions and demands.

The functions of the inspector are to inspect for health and for marks and brands, at the railway loading stations, at the place of exit from the Territory, and at all places where neat cattle are gathered to be driven off their range for any purpose, or that are being driven away from their usual range, \* \* \* and to make a record of such inspection, giving the number, kind, brands, and marks, and for whom inspected. A copy of such record is immediately forwarded to the office of the sanitary board and there permanently filed.

It is also the duty of said inspectors to inspect all cattle purchased for slaughter and make report to the board of the number, kind, brands, and marks.

The law of 1903 vested in inspectors the power to seize and sequester "any live stock the ownership of which is questioned," and provides a proper legal process for determining the disposition of such stock. This provision was made necessary from the fact that prior to 1903 the certificate of record of brand was by law made prima facie evidence of ownership, and where cattle were found branded with a recorded brand of a person not the owner of the animals no adequate remedy could be had.

Under the operation of this provision the inspector or officer making seizure is required to immediately report the facts to a judge of the district court or justice of the peace, according as the value of the property seized may come within the jurisdiction of either court, and it is the duty of such official to issue or cause to be issued a citation addressed "To all whom it may concern," setting forth a seizure, with

a description of the animals, commanding them to appear on a certain day and show cause why the said property should not be forfeited to the Territory. This gives the true owner an opportunity to prove his property without reference to brands and marks, or lacking such proof of ownership the stock is condemned and sold, the proceeds reverting to the license and inspection fund.

Under the provisions referred to (sections 5, 6, and 7, law 1903) there have been tried 48 cases involving 433 head of stock, of which 289 head were condemned and sold by order of the courts, and after costs were deducted the sum of \$1,104.96 was turned into the license and inspection fund, the other 144 head being given to the true owners on presentation of proof of ownership.

The benefit which the legitimate stockman derives from this law can not be overestimated, as it at once checks the stealing of cattle by depriving the thief of the fruits of his labor, as the burden of proof is placed on the claimant, and the moneys derived from the sale of unlawfully branded stock whose true owners can not be found at once becomes available for the prosecution of violators of the law.

A number of criminal cases have been successfully prosecuted, and in two particular cases the most important results have been had. The leaders of two of the best organized gangs of cattle rustlers that ever operated in the Territory are now serving sentences of five years each in the Territorial prison at Yuma, as a result of vigorous and persistent work on the part of the inspectors, with the help of the Arizona rangers. But for the fact that funds were available with which to successfully gather and hold the burned cattle as evidence, and defray other expenses incidental to stubborn and protracted litigation, this result could not have been accomplished.

The moral effect of the conviction of these men, who had ample means to contest their cases to the very end, has demonstrated to others of their kind that justice in Arizona is no respecter of persons, and that criminal cases are tried without reference to the condition or circumstances of the accused, and has resulted in the breaking up of organized cattle stealing.

The amount expended in attorney's fees covering the cases referred to, both civil and criminal, is \$2,376.20, and in connection therewith there has been paid to sheriffs, for costs of holding and feeding stock under seizure and as evidence, \$599.50, all of which has been derived directly from the stockmen themselves in licenses, brand tax, and the proceeds of the sale of cattle seized and condemned. So that it will be seen that although in some particular cases the expense of prosecuting was apparently great, after deducting the amounts realized from the sale of animals condemned, the average cost to the Territory of trying these cases was but \$57.41 each.

The brand-tax law, which was generally recommended by the cattlemen prior to its passage, has proved to be a popular measure in view of the results. Of the series of 1903-4 there were 2,414 receipts issued, for which the sum of \$6,035 was received. However, a portion of this was turned in prior to the period covered by this report, although the law did not become actually operative in this connection until July 1, 1903.

While as a revenue-producing measure the brand tax has greatly contributed to the successful operation of the law, it is generally conceded that this is only a secondary advantage. By its operation owners



of numerous brands are confined to the use of those certain brands upon which the tax has been paid, and it is possible at all times to determine immediately whether a brand is being lawfully used. It enables the inspectors to discover "maverick" brands when they encounter them and to take steps to eliminate such illegal practices.

There has been a steady decline in the number of cases, both civil and criminal, that have been brought under the provisions of the law of 1903 during the last half of the year just ended. This is due to the aggressive policy that was adopted immediately upon the passage of the law, and it was demonstrated and confirmed by the courts that an adequate remedy was supplied by statute for the many illegal practices that had become traditionally and inseparably associated with the range live-stock business.

The burning of brands, rustling of cattle and horses, illegal killing, mutilating of uninspected hides, and unlawful use of brands were all dealt with as promptly as opportunity offered, and while considerable expense was attached to this line of action it was deemed best to settle these points at once and thereby obviate the necessity of the constant and protracted litigation of points that might be contested.

A list of brands upon which the tax has been paid was published and issued by the sanitary board in April. This was made necessary in order that inspectors might be informed as to what brands the tax was not paid upon so that they could enforce the provisions of the stock laws in reference thereto.

#### RANGE CONDITIONS.

The general conditions at the beginning of the fiscal year covered by this report were extremely encouraging. Feed was ample and a sufficiency of water was generally found throughout the range districts. A phenomenally heavy calf crop followed, and everything seemed to indicate a most prosperous year. Unfortunately, however, there was practically no snow or winter rains, and, in consequence, feed became short, water holes and courses dried up, and stock began to suffer.

The heavy calf crop, which had seemed a boon, became a distinct detriment in view of these conditions. It is probable that the losses by reason of the drought will amount to from 30 to 35 per cent as an average throughout the open ranges. In some sections the losses have been much heavier, while in others they have been nominal.

While the stockmen have suffered seriously, there can be no doubt that the result will be still greater progress in the improvement of the general run of range cattle by reason of the importation of new blood and more intensive methods of handling.

There has been a marked increase in the number of cattle slaughtered for home consumption during the year just ended, but the exports of live animals have been lighter.

The following figures convey the volume of business and movements of stock for the fiscal year: Cattle slaughtered in the Territory, 48,904; cattle shipped out of the Territory, 52,387; inside shipments, 32,079; horses shipped out of the Territory, 5,161; hogs, 4,573.

The cost of maintaining the inspection service in salaries to inspectors and deputies was \$12,910.83. Too much credit can not be given the Arizona Rangers for the valuable cooperation they have extended to the sanitary board in detecting and bringing to justice violators of the law. Without their assistance the efforts of live-stock inspectors would in many cases have been futile.



## SANITARY CONDITIONS.

The general sanitary and health conditions of the live stock of the Territory has been excellent, due to the stringent laws that are in force and the efficient manner in which they have been administered.

This branch of the work is in the hands of the Territorial veterinarian, who works under the direction of the board. No outbreaks of any contagious disease have occurred, and isolated cases that have been discovered and promptly dealt with have been traced to outside sources. Under the regulations in force all importations of live stock are subject to inspection by the Territorial veterinarian when in his opinion such inspection is necessary, and a complete history of the live stock imported is at all times available for reference. Owing to the statutory safeguards that have been provided, Arizona is practically free from the stringent Federal restrictions placed on nearly all the range States and Territories.

## SHEEP.

The abundant rains of the calendar year 1903 made dry feed plentiful upon most of the winter ranges, and sheep went into the winter in fine condition, but the drought from October and not ending at the close of the fiscal year was the worst that the sheep-breeding districts have experienced in the history of the Territory. There was practically no green feed on the winter ranges this spring and very little on the summer ranges. The water supply for stock constantly grew more limited, preventing the grazing of much of the best ranges during the spring and summer and necessitating the purchase of water along the line of the railroads at enormous expense to the growers.

The loss of sheep from straying and scattering upon the range has been very heavy, but the actual loss from lack of food and water of sheep held in the bands has been surprisingly small. The lamb crop, as might be expected, has been very small. In many instances it is practically nothing. The average increase will probably not exceed 20 per cent, and it is questionable whether or not there will be lambs enough raised in the Territory to keep the old stock good.

The extra expense sheepmen have been put to in caring for their herds for the past ten months has been enormous. They have been compelled to employ twice the number of herders usually required and all other expenses have increased in proportion. Upon the whole, woolgrowers have lost more in the extra expense of running their herds the past season than by actual loss of sheep and lambs. The future, however, looks more hopeful.

## OSTRICH INDUSTRY.

In the Salt River Valley the raising of the ostrich is carried on successfully, and the industry is fast becoming one of great commercial importance. In 1893 Mr. Josiah Harbert, of Phoenix, imported 16 birds from South Africa, which he placed on a farm a few miles from the city of Phoenix. A number of the birds died after the long voyage and the change of food and climate, and very little progress was made during the first few years. However, when the birds became acclimated and their care was more thoroughly understood, they began to thrive. The hatching was done by means of a large incubator and proved very successful. It was found that the birds raised in the Salt

River Valley were several inches taller than the native bird and the feather of finer quality. Full grown, the ostrich stands 8 feet and weighs 200 pounds. The male has black plumage and the female drab, the male producing rich, glossy feathers far superior in quality to those of the female. The feathers are plucked every eight months, and are sold as high as \$125 a pound in eastern markets. As much as a pound of feathers is taken from one bird at a single clipping.

The principal food of the ostrich in the Salt River Valley is alfalfa, and they are allowed to run in large pastures, where they feed contentedly and fatten easily. There are two farms in the Salt River Valley at the present time, and the total number of ostriches here is over 1,600. The farms are located near Phoenix, and a small display farm is maintained close to the city for the benefit of visitors and for the sale of plumage to the local trade. The industry is advancing, and the climate of the valley seems to be particularly adapted to the successful raising of these birds. Of the four farms in the United States the two in the Salt River Valley are the most important, and the industry seems to be a profitable one.

#### NATIONAL GUARD.

Under the efficient military guidance of Maj. Ben. W. Leavell, U. S. Army, adjutant-general of Arizona, the National Guard of the Territory has been placed in most excellent condition. The mustering in of the Second Cavalry Troop at Morenci is a sign of the new interest shown in the guard in the Territory, and the mustering out of Company E, First Infantry, at Mesa, for inefficiency, shows the strict discipline and the standard of excellence required.

The guard was equipped during the year with two Gatling guns, one of them having been installed with the Second Cavalry Troop, at Morenci, the other being retained at the capitol for emergency use should the guard be called into service in the Territory. All the ordinance necessary to equip all of the organizations has been obtained. The clothing and equipage necessary to place the entire guard in camp or active service has been received. It is the intention of the adjutant-general to give each organization in the Territory all equipment requisite for prompt response to orders for active duty, thus eliminating the necessity of furnishing the supplies from the headquarters at Phoenix.

Adjutant-General Leavell visited and inspected all of the organizations in the Territory during the month of February, and in November Col. James H. McClintock made a special inspection of Company E, at Mesa. Captain Holbrook, U. S. Army, inspected all of the organizations in April and May.

The adjutant-general reports that while the guard is far from what is to be wished, there has been marked improvement in all of the companies, excepting Company H, at Yuma, which, he says, does not show the interest necessary to make an efficient company.

#### ARIZONA RANGERS.

The conditions that demanded the organization of the ranger force in 1901 are greatly improved, although the presence of the rangers is still needed to bring about in a few years the complete victory of law



and order over the outlaw element. In a country where vast areas are open ranges lawlessness is more or less rampant, and unless restricted the Territory suffers through the depredations and desperate acts committed. To police the ranges and give protection to the remotest settler the force of rangers was organized. At the time of the formation of the company the conditions were alarming. Some of the large cattle outfits were threatened with ruin by the cattle rustlers. Herds of stock were driven boldly out of the Territory, in many instances the rightful owners of the herds being defied by the thieves. Bands of cattle rustlers existed and flourished at the expense of legitimate stock owners. Several desperate bands rode the ranges defiantly, the county officers of the law seemingly unable to put a stop to their high-handed operations.

Since the rangers were organized these bands have been dispersed. Many cattle thieves are confined in the Territory prison, having been captured by the rangers. Cattle rustling has become an unprofitable and unsafe pursuit, and the watchfulness of the rangers detects it wherever it is attempted in the Territory.

The reports of the captain of the Arizona Rangers, filed weekly in the office of the governor, show the work performed by each member of the force. Complaints filed with the governor are at once brought to the attention of the captain, and investigation is not delayed a moment. The rangers usually operate in squads of two or more, as their work is more effective in this way. They are used as peace officers, preserving law and order wherever they may be in the Territory. The force is composed of fearless men, trained in riding, roping, trailing, and shooting. The very best men to be found are enlisted, and they come for the most part from the interior points of the Territory, where they can be detailed for important work with assurances of success owing to their knowledge of the country.

During the fiscal year ended June 30, 1904, there were 453 arrests made by the rangers. Of this number 5 were charged with murder, 155 with felonies, and 293 with misdemeanors. One man was killed by the rangers in resisting arrest. No member of the ranger force has been killed during the year, although a number of them have been wounded in fights with outlaws.

The rangers are under the command of Captain Rynning, an efficient officer, fearless in the performance of his duties. John J. Brooks is lieutenant, and there are 4 sergeants and 20 privates. The men are constantly on the go, making long rides after outlaws, and taking risks without fear. They are men of good judgment, careful, and exacting. Their services to the Territory can not be overestimated, and I dare say the statement showing the number of arrests made does not represent half of the work done by these men. A great deal of good accomplished is not reported and is probably known to but few.

The personnel of the Arizona Rangers is not known to the general public, as secrecy is required in order that the most effective work may be done. Rangers are often operating in a community without the knowledge of the residents, and their presence is not known until they have completed their work.

There can be no question but that the proper manner of policing the ranges is by the formation of an organization such as Arizona possesses in its rangers.

The headquarters of the rangers is located at Douglas, Cochise



County, a town on the Mexican border, as the greater part of their work has been in the counties along the line.

The rangers have captured a large number of United States offenders, principally smugglers, Chinese unlawfully in the country, persons selling whisky to Indians, and others, all of whom have been delivered to the United States authorities. They have also captured and turned over many fugitives from justice from other States and from Mexico. The conditions throughout the Territory during the past year have been most gratifying. Law and order have prevailed, and the last band of organized rustlers has been broken up. There has been no strike rioting, mob violence, or lynching; in fact, there has not been a train robbery or lynching since the organization of the ranger force.

The most cordial relations exist between the Mexican authorities and the rangers. They have at all times assisted and cooperated in the following and apprehension of fugitives from justice and the recovery and return of stolen property back to this country. Col. Emilio Kosterlitzky of the Mexican army, Capt. Quintano Molina of the Cananea Gendarmeria, and the chiefs of police of Cananea, Agua Prieta, Naco, and Nogales, Sonora, have rendered valuable service and aided the rangers in their work along the border, thus making the border towns of Sonora no longer a place of refuge for criminals from the United States.

The relations of most of the sheriffs and other peace officers of the Territory with the rangers have been most amicable, and they have usually assisted them in their operations.

Captain Rynning reports that he has experienced some difficulty in securing the assistance of many of the various district attorneys of the Territory in the prosecution of criminal cases, particularly those arising under the live-stock laws.

The principal work of the rangers is on the ranges in connection with the live-stock interests of the Territory. They have worked in conjunction with the Live-Stock Sanitary Board and the Arizona Cattle Growers' Association, from both of which organizations they have received valuable assistance and support. During the year the rangers have recovered and restored to their rightful owners a great many strayed and stolen horses, cattle, sheep, and goats. The present stock laws are accomplishing much good, and under their operation cattle stealing has been practically wiped out in Arizona.

Captain Rynning further reports that his men are constantly kept riding the ranges and attending round-ups. A number of the rangers have been acting as live-stock inspectors, particularly along the Mexican border, thereby causing a saving to the Territory of the salary of five or six inspectors, as the rangers do this work without extra compensation.

The moral effect of having the rangers in the Territory, and by their constant appearance on the ranges, in the mountains, and patrolling the Mexican line has been most effective in keeping down crime. They cover those parts of the Territory not easily accessible to other peace officers, i. e., the mountains and cattle ranges. Their work in this regard has resulted in a saving in fees and mileage to the various counties.

From Captain Rynning's report is shown that each member of the organization rides on an average 390 miles per month, or a total for the entire force of 10,140 miles. This patrol on horseback of the

Territory is most satisfactory, considering that the force consists of only 26 men.

Captain Rynning recommends that some steps be taken toward the compiling and publishing of a list of the fugitives from justice from the various counties of the Territory similar to that published by the State of Texas. It is a necessary aid to peace officers and many fugitives would be apprehended through its agency. He also recommends that 26 Krag-Jørgensen carbines be issued to the rangers under the same terms and conditions as they are furnished to the Territorial militia.

#### IRRIGATION AND WATER STORAGE.

In a region absolutely dependent upon artificial irrigation the subject of reservoir construction is one of supreme importance. The supply of water for irrigation under the present conditions is too uncertain to build upon. Great undertakings in agriculture have to meet great risks, and often with disastrous results. When consideration is given to the fact that, with the exception of one or two showers, rain did not fall in the Salt River Valley in Arizona since September, the condition of agriculture at the close of the fiscal year in June can be imagined perhaps more vividly than described. The protracted drought lessened the flow of the streams to such an extent that many farms were deprived of their share of the water passing through the canals. The fact that there are but few ranches ruined by the drought is indeed a tribute to the system of irrigation in this valley. With the assistance of storage dams this condition would have been entirely alleviated.

The rivers have great drainage areas, and during times of flood the water rushes from mountain and mesa, swelling these water courses to their utmost capacity. The flood water soon passes off to the sea, leaving the river in its normal condition and the great stretches of irrigable lands unbenefited.

The subject of water storage has received scientific attention for many years, and the reclamation of the arid lands is now a great national question, receiving the best thought of legislative and executive officials of the Government. Arizona is proud of the attention given to the claims presented by the Geological Survey, and the selection by the honorable Secretary of the Interior of the Tonto and Colorado river projects, which combined represent an expenditure of \$6,000,000.

The Tonto dam will benefit the ranches of the Salt River Valley and add many thousand acres to the area now under cultivation.

This reservoir, when created by the construction of the dam, will cover 14,000 acres. The height of the dam will be 245 feet and the depth of the water stored at the dam will be 190 feet; the dam will be 165 feet thick at the bottom and 16 feet thick at the top. In length it will be 200 feet at the base and 653 feet at the top. When completed the Salt River dam will be the highest in the world, and the storage capacity of the reservoir will be greater than almost any three artificial reservoirs in the world, being about 1,300,000 acre-feet of water, or sufficient to cover 1,300,000 acres of land 1 foot in depth.

It has been understood that the creation of this artificial reservoir by the construction of this immense dam is but the forerunner of



further systems of water storage in aid of irrigation in Arizona, and that eventually upon all streams in the Territory, where proper sites can be found, systems of irrigation works will be constructed, and that where flood-water supply is found sufficient to guarantee more than one reservoir will be created upon a single stream in order that control of all surplus water may be had. That this is the intention of the Government all fully believe.

Work upon the Tonto dam was practically inaugurated during the past fiscal year. On July 1, 1904, the progress made, as given by Mr. L. C. Hill, the Government engineer in charge, was as follows:

On that date 4,000 feet of tunnel work on the power canal had been completed ready for the concrete lining. The total amount of tunnel work is 8,700 feet, so it is nearly half finished and work is in progress in all the tunnels. The excavation work on the power canal is moving slower than it ought to, owing to a shortage of men. A number of teams have been idle for the reason that there were no men to handle them.

The sluicing tunnel is about half finished, 230 feet of it having been completed on July 1. Work is now being prosecuted from both ends.

The contractor for the cement mill is now putting up the steel construction, the material for which is all on the ground. A large amount of the cement machinery is now in Globe or on the ground ready for placing.

The temporary power house is practically completed, the engines and boilers are set, the line shafts for the machine shops are up, and the machinery is ready to place.

They have already manufactured some red brick and are now grinding material for the firebrick.

In the road work there are now five big, hustling camps at work—one at Fish Creek Hill and two on each side of there. The road camp nearest to the dam is engaged in building a new piece of road designed to eliminate two crossings of the river, and when this is done the road will be entirely on the south side, never crossing the river at all. The other camp beyond Fish Creek is engaged in bettering a 7,000-foot stretch of road that is now passable with a fair load, but is sandy and needs improving for heavy hauling.

There is one road camp between the central camp and Mormon Flat smoothing down the high trail on the Fish Creek plateau, and the other is Mr. Utting's camp at this end. He has about 50 men employed, and on Thursday moved camp to Mormon Flat, though the road has not quite reached that point. It may be driven over now, though, with a light rig, for Mr. Utting took in a wagon with a half-ton load. He expects to work his men both ways from Mormon Flat and increase his force as fast as possible. A stage line runs from Mesa Mondays, Wednesdays, and Fridays to the end of the road, where it connects with a pack train.

Directly and indirectly, including freighters, etc., there are now between 1,000 and 1,200 men at work on the entire enterprise. Between 325 and 350 of them are being directly supplied with provisions and other equipment from the Salt River Valley, aggregating about a ton and a half of merchandise daily.

The work will be pushed ahead as rapidly as possible, and it is expected that the first benefits of the storage dam will be felt within a few years by the ranchers of the Salt River Valley.



Under reservoir conditions the Salt River Valley will become one of the most productive areas in the world. The marvelous progress made under the old conditions, with the uncertain water supply, the great risks, and the absolute dependence upon the flow of streams, will be augmented by the certainty of water when it is most needed. The fullest capacity of the land to yield crops will be brought forth, and the adversities which have discouraged agriculturists under the old conditions will have passed into history.

That the General Government does not intend to stop with one great irrigation project is evidenced by the action of the honorable Secretary of the Interior in setting aside \$3,000,000 of the reclamation fund for the construction of what is known as the Yuma project on the Colorado River. By means of a dam across the Colorado River and other works, upward of 85,000 acres of land can be reclaimed at a cost of less than \$40 an acre.

Mr. F. H. Newell, chief engineer of the U. S. Geological Survey, in a communication to the Yuma County Water Users' Association, thus describes the Yuma project:

During the winter season of 1903-4 the reclamation service made surveys for the irrigation of the valley lands of Colorado and Gila rivers in the immediate vicinity of Yuma, Ariz., and in the Yuma Indian Reservation in California, looking toward the utilization of the Colorado River for their water supply. These surveys included the making of a topographic map, on the scale of 100 feet to the inch, at the Laguna dam site, and soundings for bed rock and foundations at that point. On the California side of the river, along the route to be occupied by a possible canal, a map has been made, on the scale of 100 feet to the inch, with a small contour interval. On the Arizona side of the river a map has been made, on the scale of 100 feet to the inch, from the Laguna dam site to Yuma along the canal line, and in addition a number of angle line surveys have been run for the exact determination of the location for the canal. Below Yuma, transit surveys have been made for the location of the canal. At the crossing of the Gila River a map has been drawn, on a scale of 100 feet to the inch, and soundings made for bed rock. Preliminary location surveys have been made for a complete set of levees from the Laguna dam site to the Mexican line, on both sides of the Colorado River, and also on each side of the Gila River.

A drainage system has been projected upon the topographic maps which have been made of the entire district to an elevation of 150 feet above river level, and to the scale of 2 inches to the mile. Surveys have been made to base estimates upon for pumping plants for irrigation and drainage. Mr. H. A. Storrs, consulting electrical and mechanical engineer, has examined the ground and made plans and estimates therefor.

A board of six consulting engineers has been through the estimates of the engineers in charge in detail, and the report which is submitted is the result of the deliberations and best judgment of all these men, and all estimates and plans have been brought to the complete satisfaction of each person.

In the Yuma Indian Reservation on the California side of the river it is estimated that there will be within the levees 16,000 acres, and on the Arizona side it is estimated there will be 91,000 acres under the system, making a total of 107,000 acres. Of this area, it is estimated that 5,000 acres next to the Mexican line in Arizona will be subject to overflow in such a way as to temporarily exclude them from the irrigable areas, and in addition a small percentage of the remaining lands are known to be in sand dunes that will be above the level of the canal lines. In all it is estimated that on both sides of the river there will be a total of 86,700 acres of irrigable land, of which 73,100 acres are in Arizona. The water supply of the Colorado River is adequate for the irrigation of this area.

A number of different designs for the diversion weir have been estimated upon in the study for the most economical type that may be built in safety at this point. Several different locations have also been examined to determine the best place for this structure, bed rock having been explored for with diamond-core drilling machinery at all possible dam sites between Yuma and Picacho. As a result of these explorations the Laguna weir site has been selected as the most desirable one for the construction of a weir to serve the lands near Yuma, a high dam and high line canal

being considered impossible. The type of weir selected is one that has been tried during the last fifty years at numerous places in India and Egypt under similar conditions, 3 dams having been constructed on the Nile River within the past fifteen years on practically this same plan, all having served their purpose efficiently and being in operation to-day. This type of weir consists of a loose rock structure with a paving of stone  $1\frac{1}{2}$  feet in thickness on the downstream slope, the structure being tied together with three parallel walls of steel and concrete run longitudinally between the granite abutments on the two sides of the river, and the entire structure being further made secure by an apron of loose rock pitching 10 feet in thickness and 50 feet in width at the lower toe of the dam below the sloping pavement. The height of this weir is to be 10 feet above low water and the slope of the downstream side is 12 feet horizontal to 1 foot vertical, with the 50-foot apron below. The design calls for the upper core wall of concrete to rest upon a row of sheet piling driven into the bed of the river.

The handling of the silt of the Colorado is one of the most difficult features of this undertaking. It is known that its amount is very large. The river is on a grade of approximately one foot to the mile above the Laguna weir site, so that this weir 10 feet high will make a settling basin of relatively quiet water approximately 10 miles in length above it. At each end of the weir and constructed in solid granite rock will be a sluiceway 200 feet wide and excavated to the depth of low water in the river. These sluiceways will be closed by large gates operated by hydraulic machinery. The diversion canals will take their water above these gates from the sides of the sluiceways. The area of these sluiceways being so great, the water movement toward the canal will be slow, and most of the sediment will be deposited before reaching the canal intake. When this has accumulated to a considerable extent the sluice gates will be opened, and it is estimated that their capacity will be approximately 20,000 cubic feet per second each. This great volume of water passing through the sluiceways when the gates are opened will carry out with it the sediment deposited above the intake of the canal. The ordinary low-stage flow of the Colorado River is from 3,500 to 4,000 cubic feet per second, so the capacity of each of these sluiceways will be about five times the low-water flow of the river. These figures are given for purposes of comparison only. As the result of a number of experiments it has been found that the principal quantity of silt is carried along near the bottom of the river, and that the surface water is relatively free from sediment. It is planned, therefore, to take the water into the canals by a skimming process over a long row of flashboards, so that the entire capacity of the canal can be furnished by drawing but one foot in depth of water from the surface of the river.

As a still further precaution it is proposed to construct the first 3,000 feet of canal on each side of the river of such size that the movement of water through it will be slower than one foot per second. These settling basins, as they are called, would be either excavated from granite, or where the section is in earth they would be paved. At the lower end of these settling basins gates will be arranged to discharge into the river, so that the water can be drawn down to the level of the stream, and a grade of 11 feet in 3,000 feet thus obtained. At the lower end of the settling basins the canals proper will begin. The silt that will enter the settling basins in spite of the two precautions noted above, will be permitted to settle in these basins, and at such intervals of time as may be necessary the sluice gates at the end of the settling basins will be opened and sufficient water drawn into this section through the headworks to scour it out. Every portion of this weir and headworks as designed would be of rock, concrete, or steel, with the exception of the sheet piling, which will be driven entirely below the water level, and so will not decay. Every portion of the weir will be what is known as permanent construction. Such character of work will, of course, be expensive, but it has been proved to be sound economy to build in this way.

The capacity of these canals at their intakes will be 1,200 cubic feet per second on the Arizona side and 200 cubic feet per second on the California side. The amount of silt that would be daily delivered into the Arizona canal, if diversion were made directly from the stream, would approximate 17,000 cubic yards of wet mud by volume. It is not believed to be possible for a canal to continuously operate successfully for the irrigation of lands along the valleys of the Colorado River unless some very substantial arrangements are made at the headworks for the handling of silt, and this is believed to be a justification for the expenditure proposed for these headworks; also the water must be held to a fixed level at the canal heading for all stages of the river. This structure will cost approximately \$1,000,000.

Careful study has been made of the existing canals in the vicinity of Yuma and Imperial to determine the shape that they naturally assume, and the roughness of the bottom and sides, which tends to retard the velocity. Based upon this data, the



canals have been designed so they will carry water at a higher velocity throughout than will be found in the settling basins above their head, and of such velocity as will permit of a minimum loss by seepage and evaporation. The gates and drops of these canals and the Yuma bridges are designed as steel concrete structures. A distribution system has been estimated upon to furnish water to each 160-acre tract. There will be small areas of land in the upper Gila Valley, and below Yuma, that will have to be served by pumping plants that will lift the water from 5 to 7 feet. The power for doing this will be furnished from a water-power plant to be erected above Yuma at a drop in the main canal. This power plant will also be used in connection with the drainage system.

One of the most difficult problems in connection with this project is the crossing of the Gila River. It has been considered necessary to make this perfectly safe, and for this purpose a structure has been designed that will cross beneath the bed of the river, the top to be several feet below the lowest point of the stream bed. This structure will be of steel and concrete, some 3,300 feet in length.

Because of the annual rise of the Colorado River, a large portion of the lands along this stream are subject to annual overflow which practically prevents residence thereon, as well as the farming of them without protective works. The levee, therefore, is considered an essential feature of the enterprise. The shape of levee adopted is one that has been developed by years of experience along the Mississippi River. It will have a slope of 3 feet horizontal for 1 foot vertical on the water side, and  $2\frac{1}{2}$  feet horizontal to 1 foot vertical on the land side; it will be 8 feet wide on top, and be built 5 feet above the highest watermarks of the year 1903. These levees will be 4,000 feet apart (one on each side) along the Colorado River, and 3,200 feet apart along the Gila River.

Because these lands are so flat, and the level of the water in the ground so near the surface, it is considered necessary, for their permanent safe irrigation, to supply a drainage system. A main drainage canal has been designed to run through the central portion of the areas to be irrigated, and when possible the natural drainage lines of the country will be utilized, deepening them with a steam dredger to such depth that they will carry off the water returning from irrigation or seeping through the levees during the high-water stage of the river.

When lands in any district tend to become alkaline they may be connected, by means of local drainage canals, with this main drain, and in this manner they could be kept free from alkali by holding down the level of the ground water. During the greater portion of the year when the river is low, this drainage water would be discharged into the stream, but when the river is in flood its elevation will be such as to prevent a discharge into it from the drains. A pumping plant has therefore been designed to lift the drainage waters over the levees during the flood period of the river to prevent the lands becoming water-logged.

The whole system, as planned above, is one looking to the permanent reclamation of this district by means of irrigation, levee, and drainage works. All portions of the system to be made of steel, concrete, or earthwork.

The reports of the Department of Agriculture on the character of the soils of this valley, as well as past farming experience, indicate that they are exceedingly fertile. The silt of the Colorado River, all of which can not be removed at the head works, has high fertilizing properties. Under these conditions and with proper handling of the system, the valley should be perpetually fertile. The entire cost of this enterprise, providing all the area is irrigated which is indicated above, will amount, according to the estimate, to about \$35 per acre irrigated. It is entirely possible, however, that as this construction work proceeds this cost may be somewhat increased or lessened, although an effort has been made to cover all contingencies, and the estimates of cost have been liberal. The price will range near \$35 per acre, this to be paid for according to the provisions of the reclamation act and regulations of the Secretary of the Interior, in ten annual installments after the first delivery of water. The annual charge for maintenance and supervision of this system will be very low and probably materially less than \$1 per acre. There will be no charge for interest, profit, or taxes.

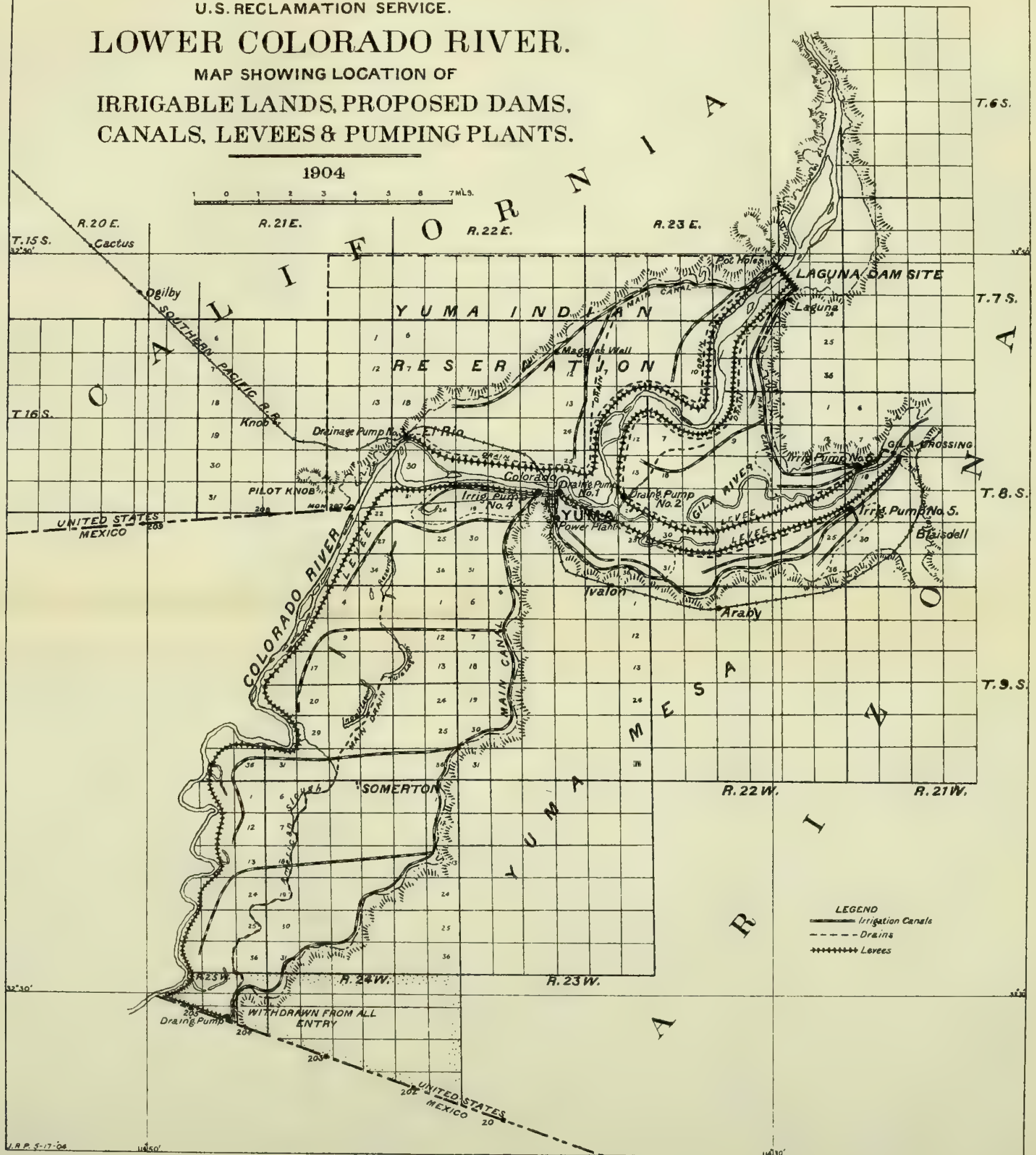
In order to keep the price as low as that estimated upon and to proceed with the construction of the works, it will be necessary for all of the landowners of the portion of the district that is in Arizona, under the projected canal, to enter into an agreement with the Secretary of the Interior through their local water users' association for the payment of the water when it is delivered to them. The reclamation service has made the surveys and estimates required for the Secretary of the Interior concerning the costs and character of these works, but it will be absolutely necessary for the local landowners to submit to the Secretary, through their local associations, the contracts for the acceptance of the water; and also to provide for the rights of way



U.S. RECLAMATION SERVICE.

# LOWER COLORADO RIVER.

MAP SHOWING LOCATION OF  
IRRIGABLE LANDS, PROPOSED DAMS,  
CANALS, LEVEES & PUMPING PLANTS.



A cross-sectional diagram of a canal. The canal is 95.15' wide at the bottom and 5' deep. The water surface is labeled "Surface of Water". The canal bed is labeled "Silt". The left bank is labeled "Earth" and has a height of 8' and a slope of 1 1/2:1. The right bank is also labeled "Earth" and has a height of 8'. The ground surface is labeled "Surface of Ground".

required for the levee, power plants, transmission lines, etc. When these contracts and agreements have been prepared they will be given careful consideration by the Department.

The Secretary of the Interior has set aside \$3,000,000 of the reclamation fund for the construction of this project, contingent upon the action of the landowners of this valley and their entering into contracts with the Department in accordance with the provision of the reclamation act passed June 17, 1902.

Presented herewith is a map showing the location of the irrigable lands under the Yuma project, the proposed dams, canals, levees, and pumping plants.

#### AVAILABLE DAM SITES.

There are numerous available water-storage sites in this Territory. Many of them are large, demanding extended research and study, and some are small, where the expenditure of a few hundred thousand dollars would construct a dam which would store water for 10,000 or 20,000 acres of land. We can congratulate ourselves that the Government has now in hand two of the very largest projects in the Territory; and interest centers in the success of these. The smaller ones are also receiving attention, as appears in the report of the U. S. Geological Survey presented herewith.

On April 18, 1904, a letter was addressed to the governor of Arizona by Mr. Charles D. Walcott, Director of the U. S. Geological Survey, in which he asked for suggestions regarding the extension of the work of measuring streams and investigating the water resources of the Territory for the purpose of further irrigation and industrial development. The reply sent from this office was necessarily brief, covering the salient points in the great field of operation. The subject requiring extended research, my suggestions only superficially covered the ground, as it appeared to my mind from personal observations during a residence of many years in Arizona.

In order to extend the benefits of the reclamation law throughout the Territory, I suggested that the water supply of the Santa Cruz Valley be given attention; that the many small reservoir sites in different parts of the Territory be exploited, and that subsidiary dams be constructed on the upper tributaries of streams, rendering assistance to those farmers who are struggling along with the uncertain water supply of their sections and furnishing available lands for thousands of settlers.

The success of the work undertaken in this Territory by the U. S. Geological Survey is a source of pride to the people of Arizona. The researches extend to many sections of the Territory, and many important discoveries have been made. The recommendations made show the wisdom of the Government engineers.

The advisability of extending the surveys already inaugurated to the upper tributaries of the Salt and Gila rivers was suggested with the view of securing available reservoir sites on these streams and their tributaries. The upper stretches of the Little Colorado River, which heads in the vicinity of the White Mountains, also furnish a rich field for research and investigation.

It was further suggested that surveys for the location of underground water be extended, with the aim of furthering irrigation enterprises whose bases of operation lie in power pumping plants.



## SAN CARLOS DAM SITE.

For many years the San Carlos reservoir project has been discussed in Arizona, and its feasibility determined by the United States Geological Survey. That it comes next in line with the Tonto and Yuma projects in importance is admitted by all. Indeed, the San Carlos site was talked of long before any others were mentioned, and it was the general belief in this Territory that it would be selected for construction before any others would be taken up. However, the wisdom of the honorable Secretary of the Interior in selecting the Tonto site has never been questioned, and the construction of that dam and the selection of the Yuma project give encouragement that the San Carlos site will come next.

The keen disappointment felt by the people of the Middle Gila and Casa Grande valleys over the failure of the San Carlos site to win favorable consideration is accounted for most naturally by the fact that they were for years led to believe that their project would be the first to receive attention under the reclamation law. The failure of the project to receive attention disheartened the settlers; in many instances it brought severe losses. In the Middle Gila and Casa Grande valleys to-day thousands of acres of lands have reverted to the desert, owing to the shortage of water; farther on the Pima and Papago Indians have suffered, and the Government is forced to provide rations for the destitute families. The San Carlos dam would provide water for the white settlers as well as the Indians.

The Government has already expended \$26,000 in ascertaining the feasibility of water storage on the Gila. The United States Geological Survey has determined that the Gila River is the only available source of permanent water supply for the Pima Indians, and it has pronounced the San Carlos site feasible. The following conclusions have been published in Irrigation Papers No. 33, United States Geological Survey, concerning the San Carlos dam site:

That it is feasible to construct a masonry dam at Riverside at a cost of \$1,989,605, including damages for right of way and diversion dam at the head of the Florence canal, forming a reservoir with a capacity of 221,134 acre-feet.

That it is feasible to increase the height of the dam at the Riverside dam at least 70 feet higher than the one estimated upon, giving an ultimate reservoir capacity of about 650,000 acre-feet, which would not be filled with solid matter short of sixty-seven years.

That it is feasible to construct a masonry dam at San Carlos at a cost of \$1,038,926, including damages for right of way and diversion dam at the head of the Florence canal, forming a reservoir of 241,396 acre-feet capacity, and that the water supply is ample to fill such a reservoir in the years of minimum flow, and that the volume of the storage will irrigate at least 100,000 acres in addition to the irrigation of the lands of the Indians.

That it is feasible to construct a dam at San Carlos at least 70 feet higher than that contemplated in the estimates, forming a reservoir whose ultimate capacity would be approximately 550,000 acre-feet and whose probable life of usefulness would be sixty-three years before being filled with silt.

That provision should be made in the working plans for these ultimate extensions suggested and the right of way reserved in the reservoir basin for the additional area that may ultimately be flooded.

That the working plans for the San Carlos dam should be drawn to permit of the complete utilization of all power which may be developed from the head of the water issuing from the reservoir and steps be taken for realizing upon the full commercial value of the power.

Estimated cost of San Carlos dam on a basis of 74 feet to bed rock:

Rubble masonry, laid in concrete, 94,730 cubic yards, at \$6..... \$568,380

NOTE.—with sand cement at \$4.63 per barrel, or \$4.28 per cubic yard. (See Duryee's report.) This figure is based on half of the mass being large rock and half concrete.

Excavation, foundation, pumping, etc.....	150,000
1 semicircular tower of concrete, 13,632 cubic feet, at 50 cents.....	6,816
1 tower, same diameter inside, 60 feet high, 4,388 cubic feet, at 50 cents..	2,119
2 tower houses, including the semicircular base of concrete, at \$750 each..	1,500
10 inlets for towers, at \$500 each.....	5,000
2 balance valves, at \$1,000 each.....	2,000
2 balance valves, at \$750 each.....	1,500
610 linear feet of footbridge, at \$10.....	6,100
5 miles of railway, moved, at \$10,000 per mile.....	50,000
New irrigation system above the Indian agency.....	20,000
Damage to agency and post buildings.....	60,000
Low-water diversion tunnel.....	10,000
Wooden crib diversion dam at head of irrigation canal.....	20,000
	<hr/>
	903,415
Contingencies, 10 per cent.....	90,341
Engineering, 5 per cent.....	45,170
	<hr/>
Total.....	1,038,926

Total number of acre-feet stored is 241,396, at a rate of \$4.30 per acre-foot.

The San Carlos dam site and the lands to be benefited by its construction are described in an article written by Mr. Arthur P. Davis, of the United States Geological Survey, published in the National Magazine in March, 1902, excerpts from which are respectfully presented as follows as showing the feasibility of the proposition from an eminent engineering source:

The Gila River Indian Reservation is occupied largely by the Pima, Maricopa, and a limited number of Papago Indians. Our earliest knowledge of these Indians indicates that they have long been industrious farmers and irrigators, as they continued to be for many years after the acquisition of Arizona by the United States. Wheat, corn, and vegetables have been raised in large quantities, and they have manufactured earthenware, baskets, and a few woolen and cotton articles. They gave assistance to the early white settlers, and their doors were always open to peaceable whites and Indians when hard pressed by savage tribes. Until recently these tribes, living in small villages, have supported themselves, and their progress toward civilization has been regarded as one of the encouraging features of the Indian problem. Their agriculture was carried on entirely by irrigation, with water diverted from the Gila River.

Disregarding the rights and necessities of these Indians, the United States has been disposing of arid lands in the valley of the Gila River above the Indian reservation, which could not possibly be rendered of value except through the use of the waters of this river. Gradually such lands have been brought under irrigation until in a course of nearly 200 miles and by innumerable ditches the waters of the Gila have been entirely diverted. During several months of the summer there has been in recent years little or no water in the Gila River on the Indian reservation.

It is universally recognized that the deprival of these Indians of their irrigating supply is not only a grievous hardship, but a great wrong, both in law and equity. The United States Government, which is the sole guardian of the rights and interests of these Indians, is bound by every consideration of justice and economy, as well as sound public policy, to restore to them a sufficient quantity of water to enable them to resume the practice of agriculture as of old.

It is now necessary to issue considerable sustenance to the Indians, and in a very short time such charity, while permitting the Indians to degenerate in a most deplorable manner, will become a serious expense to the United States, much greater than the interest upon the total cost of the irrigation works recommended. These, if built, would not only give the Indians an ample water supply, but bring under cultivation 100,000 acres of public lands and furnish homes for 40,000 white inhabitants.



It is estimated that 40,000 acre-feet of water per annum is necessary for these Indians to support themselves by agriculture. A thorough knowledge of the country and careful investigation of all possibilities establishes the fact that the only available means of providing a reliable supply of this quantity of water annually, is by storing the flood waters which now flow to waste in the channel of the Gila River.

By far the most feasible and economical reservoir site available for this purpose is situated on the San Carlos Indian Reservation, about 2 miles below the mouth of the San Carlos River, where the Gila River enters a narrow canyon. A dam constructed at this point to an elevation of 142 feet above the bed of the river, would form a storage reservoir with a capacity of 240,000 acre-feet, i. e., it would impound sufficient water to cover 240,000 acres 1 foot deep.

The estimated cost of the structure, including the diversion works, a liberal allowance for all damages, and 10 per cent for unforeseen contingencies, is \$1,190,000. The water drawn from the reservoir for irrigation would flow down the channel of the river as it does naturally and be diverted at a favorable point.

Considering water supply, irrigable land, and the remarkable facilities for building and maintaining a large storage reservoir, there are few reservoir sites in the arid region equal to the one at San Carlos. If built, it will not only solve the problem of supporting and civilizing three tribes of Indians, but it will furnish a reliable supply of water for the reclamation of 100,000 acres of Government land, now a barren desert, entirely without value in its present state. This land should be disposed of in tracts of 20 or 40 acres under the provisions of the homestead act, with a charge sufficient to cover the cost of the work.

It has been abundantly proved, both in California and Arizona, that under the intensive cultivation possible with irrigation in a semitropical climate, 20 acres is sufficient land for the support of a family. Including the urban population, which will necessarily accompany such a development, homes will be provided for not less than 40,000 souls, and under the terms suggested, any industrious man can make a comfortable home in Arizona as easily as was done half a century ago in Illinois and Missouri.

The argument in favor of the construction of a reservoir for the storage of the waters of the Gila River by the United States Government is stronger, perhaps, than for any other project in the country, for the following reasons:

1. The Government has expended large sums of money for the introduction of irrigation on the Indian reservations, where it is desired to educate the Indian into agricultural habits as a means of his civilization. This is a well-established and wise public policy, and has already been productive of much good, but it is always in the nature of an experiment, and more or less difficulty and uncertainty is attendant upon the attempt to induce the Indians to accept this mode of livelihood. In the present case we have tribes of Indians who have for centuries been engaged in agriculture by irrigation, and who were until recently the only successful irrigators in Arizona. These Indians have been deprived of their water supply through the agency of the white man, directly encouraged by the United States Government. It is an imperative obligation of honor that their supply should be restored to them, and the only practical means of this restoration is by storage on the Gila River.

#### RÉSUMÉ OF RECLAMATION WORK IN ARIZONA.

I am indebted to Mr. H. C. Rizer, Acting Director of the United States Geological Survey, for much valuable information concerning the operations of this department in Arizona during the year.

#### TOPOGRAPHIC WORK.

During the fiscal year 1903-4 four surveying parties of the United States Geological Survey were engaged in topographic work in Arizona. Level lines from the Nogales datum were connected with those based on the Phoenix datum, and surveys were made of areas in southern Arizona comprising 2,674 square miles. These areas form what are known as the Bright Angel, Vishnu, Tucson, Patagonia, and Nogales quadrangles. The Bright Angel and Vishnu quadrangles (in the Grand Canyon Forest Reserve) will be mapped on the scale of 1 mile to 1 inch; the Tucson (Santa Catalina Forest Reserve), the Patagonia



(Santa Rita Forest Reserve), and the Nogales quadrangles on the scale of 2 miles to 1 inch. These surveys were made under the direction of Mr. F. E. Matthes and Mr. T. M. Bannon.

#### GEOLOGIC WORK.

Two reports on geologic work previously done in the Globe and Bisbee mining districts have been published during the year as Professional Papers 12 and 21 of the Geological Survey, and a third report, on the Clifton mining district, is in preparation.

#### HYDROGRAPHIC WORK.

The hydrographic work in this Territory has been carried on under the reclamation law, Mr. Arthur P. Davis, supervising engineer, having general charge.

The relative merits of the San Carlos (Gila River) and Salt River reservoir sites were considered, the opportunities for the storage of water in various parts of the Territory were investigated, and a study was made of the underground waters of the Salt River Valley which may be made available by pumping.

*Salt River project.*—This project involves the construction of a dam 220 feet high, at an estimated cost of about \$3,000,000, for the storage of 1,200,000 acre-feet of water. The dam site is on Salt River, about 60 miles above Phoenix and immediately below the mouth of Tonto Creek. Water stored at this point will be turned down Salt River and utilized on 160,000 to 200,000 acres of land in the vicinity of Phoenix. Most of the land is in private ownership, but all the surrounding public land has been withdrawn pending survey. An association of water users has been formed for the purpose of dealing with the Secretary of the Interior and guaranteeing the carrying out of the purposes of the law and repayment of cost of reclamation.

Contracts have already been entered into for generators for temporary power plant, machinery for Portland cement plant, mill for Portland cement plant, electric motors, excavation and completion of sluicing tunnel, telephone line from Arizona dam to Livingstone, water wheels, etc., for power plant, and power canal and auxiliary works in Tonto basin. A waterworks system has been installed for the purpose of supplying potable water to the camp and town at Roosevelt. The total number of men at present at work on this project is about 1,000.

The cadastral survey of the irrigable lands in the Phoenix Valley has been completed.

*San Carlos project.*—This site is on the White Mountain Indian Reservation, below San Carlos, on Gila River. A dam at this point will impound about 240,000 acre-feet of water at a cost of little over \$2,000,000. The stored water will be turned down Gila River and taken out for use in the valley in the vicinity of Florence and on the Gila Indian Reservation near Sacaton. A detailed topographical map has been made of the dam site and a contour map partially made of the reservoir. Observations of river flow and sediment are being continued and reconnaissance surveys are being made of possible reservoir sites on the upper Gila.

*San Pedro project.*—This project is located in the southeastern part of the Territory, along the San Pedro River, near Benson, Cochise County. No estimate can be made of the feasibility of the project until the amount of water supply has been settled. A gauging station has been established, and observations will be continued until sufficient data are collected to form a basis for a reasonable estimate of the water supply.

*Sacaton Indian Reservation.*—An investigation has been made looking to the irrigation of about 10,000 acres of land by pumping water from wells. The estimate of the cost of this project is from \$30 to \$35 per acre. It seems certain that a large amount of fairly good water is available for irrigation by pumping in the whole district southeast of Phoenix, the power for pumping to be supplied from one of the power plants along the Salt River.

*Colorado River work.*—During the winter of 1903-4 surveys were made for the irrigation of the valley lands of Colorado and Gila rivers in the immediate vicinity of Yuma, Ariz., and in the Yuma Indian Reservation in California. A weir site has been selected at Laguna, to serve the lands near Yuma, a high dam and high-line canal being considered impracticable. The project as planned looks to the permanent reclamation of this district by means of irrigation, levee, and drainage works.

The surveys made included the making of a topographic map on the scale of 100 feet to the inch at the Laguna dam site, and soundings for bed rock and foundations at that point; also a map on the same scale along the canal line to Yuma, and a number of angle line surveys have been run for the exact determination of the location of the canal. Preliminary location surveys have been made for a complete set of levees from the Laguna dam site to the Mexican line on both sides of the Colorado and Gila rivers. It is estimated that there will be within the levees on the Arizona side 73,100 acres of irrigable land under the system. Plans and estimates and specifications for the letting of contracts are now being prepared, and if the holders of the private lands in the Yuma Valley accept the provisions of the reclamation act bids will be advertised for early in August, and it is hoped that work of construction may be begun in October. A water users' association has been incorporated and organized in a manner satisfactory to the officers of the reclamation service.

*Reconnaissance.*—Various reconnaissance surveys have been made in the southern part of the Territory, principally on streams tributary to the Gila. In particular, an examination of the underground waters has been carried on, under the direction of Mr. N. H. Darton, by Mr. Willis T. Lee. Mr. Lee has found that there are definite ancient channels filled with gravel, from which water in considerable quantities may be pumped. Some of this water is alkaline, but a great portion of it may be utilized for the reclamation of arid land.

#### AGRICULTURE AND HORTICULTURE.

The agriculture and horticulture of Arizona is necessarily becoming more and more intensive in character. The limited water supply for irrigation, the long growing season, the variety of crops possible, and the excellent home markets constitute both natural and commercial conditions favorable to diversified farming and maximum production.



The irrigable areas are limited only by the scanty water supply, excepting along the Colorado River, where as yet water is far in excess of land under cultivation; consequently, out of 72,000,000 acres of the Territorial area we find, approximately, but 5,541,547 acres privately owned, of which only about 250,000 acres are actually irrigated. This area is destined to increase as irrigators improve their methods of farming, when storage reservoirs make possible the utilization of flood waters, when reduced cost of pumping makes available the underground supply, and especially when the Colorado River is more fully utilized. Along these lines it may be reasonably predicted that irrigated lands within the Territory will easily double their present area within a few years.

The grazing industries also, which are now in large part supported on the public lands, are capable of much-needed improvement when legal conditions are such that it shall be possible to so administer the open range that properly regulated use may be made of its resources.

In agriculture the uncommon variety and amount of marketable produce possible is due to prevailing conditions of soil, irrigation, and climate. The soils of Arizona, as is usual with the soils of arid regions, are rich in most of the elements of fertility, requiring only the ever needful water, skill, and industry in their management to secure abundant returns. The fertility of cultivated soils in irrigated regions is further assured by the deposit of silt brought upon the land by irrigation water. The problems of fertilization, which become so serious in humid sections, are therefore of much less importance here and not to be so carefully reckoned with in connection with the future of our agriculture. The most marked influence in connection with agriculture and horticulture, especially in southern Arizona, is the climate. From January to June the temperature resembles that of spring and early summer in the latitude of Kentucky. From June to September the climate is of subtropical fervor, while from September to November there is a second mild season of temperate weather. The winter season, from November to January, though subject to sharp frosts in southern Arizona, is not seriously or even uncomfortably cold.

Owing to this combination of seasons a remarkable variety of crops may be found in the same locality at different times of the year. Strawberries, which flourish in Greenland, may be found on common ground with the date palm from Sahara. Alfalfa, the great forage of the arid West, flourishes alongside of wheat, corn, and sorghum, respectively, characteristic of Minnesota, Illinois, and Kansas. Oranges, lemons, and olives from California may be found in the same neighborhood with peanuts and sweet potatoes from Virginia. In brief, many of the leading crops of both temperate and subtropical countries which are not affected by a too arid atmosphere or by the frosts of winter flourish in southern Arizona. In northern Arizona, where the temperatures more resemble those of northern Illinois, many more distinctively temperate-region crops flourish, such as corn, potatoes, apples, and various small fruits.

The earliness of the season for some crops, such as oranges, melons, tomatoes, apricots, and other export products, is an advantage to the Arizona farmer, while the strong demand for farm supplies in the many mining camps and towns of the Territory maintains a fair average of produce values.



What these values are may be judged by the following figures relating to certain crops grown on the Experiment Station Farm during 1901:

Crop.	Yield per acre.	Gross value per acre.	Cost of produc- ing and market- ing per acre.	Net value per acre.
	<i>Pounds.</i>			
Wheat .....	2, 150	\$22.55	\$10.25	\$12.30
Potatoes .....	3, 600	85.00	34.50	50.50
Tomatoes .....	12, 300	225.00	75.00	150.00
Strawberries .....	5, 000	500.00	150.00	350.00
Melons .....	27, 000	140.00	26.00	114.00
Egyptian cotton .....	400	68.00	48.00	20.00
Corn .....	1, 735	18.00	9.50	8.50

#### STAPLE CROPS.

*Alfalfa.*—Probably the most important crop in Arizona is alfalfa. With from four to seven cuttings a year possible, it may be stated that probably in no considerable district within the United States does this plant yield more abundantly.

It has several values in our agriculture. First, as nay there is a constant market at good prices in the adjoining mining country, prices for baled hay ranging from \$7 to \$14 a ton. A more profitable disposal for alfalfa, ordinarily, is as a stock fattener. It is so employed in feeding hogs and cattle; also in connection with a thriving dairy industry. It is estimated that about \$1,500,000 worth of alfalfa hay and fat cattle annually are exported from Salt River Valley. With improved methods of feeding this output can doubtless be greatly increased.

With butter now being shipped into Arizona from Kansas, it is also evident that there is yet room for the growth of the dairy industry. There are at present four creameries and cheese factories in the Territory, and a condensed-milk factory is immediately in prospect.

Another very important use of alfalfa is as a soil renovator. Our semiarid desert soils are commonly dense and deficient in humus and nitrogen—circumstances leading to a condition of poor tilth, which often makes successful culture of ordinary crops a difficult matter. Alfalfa, however, flourishes in these soils, and in so doing loosens them to considerable depths by means of its roots, and through its processes of growth and decay contributes the much-desired humus and nitrogen to the soil. In this way alfalfa serves as a preparation for other crops; and it is a matter of common observation that orchards, wheat, sugar beets, and other crops all flourish best on ground which has previously been in alfalfa.

*Barley.*—From early times barley has been grown in Arizona as a hay crop, being cut and baled for this purpose before maturity. Four to five tons of hay per acre is a fair yield. Certain varieties of beardless and hull-less barley recently introduced have advantages over the ordinary bearded. The yield of grain per acre is from 30 to 50 bushels.

*Corn.*—Although small, quick-growing varieties of corn have long been grown by the Indians and Mexicans in the Southwest, it is only within the past few years that fine crops of improved varieties have been grown by American farmers. In order that the grain may prop-

erly fill, corn must be planted in July, late enough so that in maturing it may just escape the fall frosts. With the long growing seasons it is possible, water supply permitting, to mature a crop of corn after harvesting a crop of wheat or barley.

*Wheat.*—Wheat is a leading staple, both as grain and as hay. It is grown as a winter and spring crop, maturing usually before the summer shortage of water occurs.

The chief variety grown is the Sonora wheat of this region, but certain Australian varieties have found favor, and effort is being made to import such new kinds as will make a better milling combination than does Sonora wheat alone. At present much wheat is imported from California by the large flouring mills in Phoenix, Tempe, Tucson, Solomonville, Safford, and Thatcher.

*Other grains and forages.*—Sorghum has become one of our most important forage crops, not only because of its use for stock-feeding purposes, but because it thrives on land containing considerable alkali. Grown upon such lands, the alkali is partly taken up and removed with the crop, to this extent renovating and improving the soil for other crops. The clubhead is the best and most commonly grown variety in this region.

Kaffir corn approaches sorghum in yield of forage, while Egyptian corn, an excellent drought resister, has proved to be a very promising source of grain. Cowpeas and rye may be grown experimentally, but are of minor value in this region. Oats are more grown than formerly, being, like wheat and barley, sown in with alfalfa for a first cutting of mixed hay.

*Root crops.*—Many of the important root crops thrive in Arizona. The common potato grows wild at higher altitudes within the Territory. In northern valleys heavy crops are grown by irrigation. In southern Arizona two crops may be grown, the principal one being planted in February and a less satisfactory one in August. Early Rose, Burpee's Extra Early, Early Andes, Bovee, and Triumph all do well, and from 4,000 to 5,000 pounds per acre is an ordinary crop.

Sweet potatoes and yams produce well in suitable soil, a specimen of the latter weighing  $36\frac{3}{4}$  pounds, from the upper Gila, being on record.

Field beets, carrots, parsnips, peanuts, radishes, and turnips are all grown with success.

*Sugar beets.*—During the past six years the Arizona Experiment Station has devoted much time to the investigation of sugar beets, demonstrating the proper methods of agriculture, the productiveness, and the quality of this crop in the Territory. The following is a summary of the results obtained during the last two seasons:

Average of seventeen samples grown in vicinity of Pima and Safford, Ariz., 1901: Sugar in beets, 12.7; purity, 81.9; yield per acre (calculated from results on fractional acre plots), 18.6.

Average of eighteen samples grown in Salt River Valley, 1902: Sugar in beets, 15.7; purity, 81.7; yield per acre (calculated from results on fractional acre plots), 19.5.

These figures justify the statement previously made that a satisfactory yield of beets of medium and sometimes excellent quality can be grown in southern Arizona, the precautions of early planting, suitable soil, and careful cultivation and irrigation being taken. Following these investigations the Eastern Sugar Company has commenced



the erection of a beet-sugar factory near Glendale, Ariz., which, it is stated, will cost about \$800,000 and will handle between 500 and 1,000 tons of beets a day. If successful this large undertaking will be a very important addition to the resources of this region.

*Vegetables.*—Green vegetables in unusual variety may be produced if proper attention is paid to the planting seasons. As mentioned above there are two mild, temperate seasons in southern Arizona—one extending from January to June, the other from September well into November. Certain of the more quickly growing vegetables, therefore, may be made to produce both in the spring and the fall, this double season being recognized by the more experienced residents of this section. Asparagus, beans, cabbage, cauliflower, celery, table corn, cucumbers, eggplant, lettuce, melons, peas, spinach, squashes, tomatoes, and other varieties of vegetables in yearly increasing number are successfully grown.

*Fruits.*—In northern Arizona, and in certain of the higher valleys where the climate is temperate in character, apples, cherries, pears, and peaches of excellent quality are grown, but only in small quantities, since the irrigated areas are small. Apricots, grapes, and raisins are shipped in considerable quantities from the Salt River Valley. Oranges and lemons of superior quality are produced in Salt River Valley and near Yuma. They have the commercial advantages of a season earlier than that of southern California, while, in addition, the fruit is uncommonly bright and attractive in appearance. This is due to the fact that the scale insects perish from the effects of the dry, hot atmosphere, leaving the fruit unmarred by their presence. Strawberries in skillful hands are a very profitable crop in southern Arizona, the entire product being marketed in the Territory. Figs grow luxuriantly in southern Arizona, but require a constant and abundant supply of water in order to yield well. Almonds have been grown with varying success. The great drawback to their culture is the late spring frosts, which are so likely to destroy the crop. For the past four years, however, the growers have in most instances succeeded in warding off the disastrous frosts by smudging their orchards at critical times. During this time heavy crops of the highest market value have been secured, especially in the vicinity of Mesa City.

Olives are a promising crop in southern Arizona. This tree requires comparatively little water, and the scale, which is so abundant upon the tree in southern California, is not found upon it here. Experts state that the trees grown in Arizona are unusually bright and attractive in appearance and their fruit of good quality. The product of the olive tree, also, either in the form of pickles or oil, may be held for the best market and is of small weight and bulk in comparison with its value, shipping charges being thus economized. It is not improbable that this fruit has a growing future in this region, since the demands for olive products is at present throughout the United States far in excess of the supply.

*The date palm.*—Experimental work with the date palm has steadily progressed during the year. Although large groves of these trees are found here and there throughout Sonora, many individuals having an age of 200 years or more, and although their product is a popular article of food with the Mexicans of this region, no systematic attempt has before been made on the Western Hemisphere to develop the full value of this useful tree.



The product is not only a palatable fruit, now mostly used as a luxury, but is an excellent food, especially suitable for hot climates. As a food, the date is the chief dependence of men, horses, and camels in the desert regions of Africa and Arabia, and its use as a staple in the United States is capable of indefinite increase. The annual importation of dates into the United States now amounts to about \$400,000 in value, being an incentive to the establishment of a new industry, which, for climatic reasons, can only be developed in the hot, irrigated valleys of the semiarid Southwest.

The experimental date orchard, 3 miles south of Tempe, has prospered during the year, two large shipments from Egypt, Arabia, and Beluchistan having been received and planted. Eleven acres of palms are now in the ground, comprising 80 imported varieties and about 600 trees.

The large shipment brought from Algiers in July, 1900, has done surprisingly well in the new orchard, and at the present time, June, 1903, no less than fifty-nine of the transplants are bearing small bunches of young fruit. It will be several years before the best varieties for this country may be finally determined; but there is little doubt that in time this experimental work will result in the establishment of a new agricultural resource in the Southwest.

*Miscellaneous products.*—Bees produce an abundance of excellent honey in this region, depending in part upon alfalfa and in part upon the inflorescence of the mesquite, various acacias, and other wild vegetation. According to the Twelfth Census, Arizona is stated to have produced \$67,489 worth of honey and wax in the season of 1899, largely shipped in carload lots to eastern points.

Tobacco may be grown under irrigation, but its culture has not as yet received expert attention. Much of the native product is worked up by local manufacturers, chiefly for the Mexican trade.

Experimental work with Egyptian cotton, a valuable Old World long staple variety, indicates that it produces excellent fiber here, but its commercial success is yet to be demonstrated.

In general, it may be stated that the combination of temperate and subtropical characters in the climate of this region, together with the intensive methods consequent upon irrigation, have combined to make possible an extraordinary variety of agricultural productions, for which there exists a ready market in the surrounding mining districts.

The resources and experience of the ancient cultivated regions of Egypt, Asia Minor, and India are of value to southwestern farmers, who may gain many useful suggestions from these countries.

It is interesting in this connection to note the remarkable similarity of the lower Colorado to the exceedingly rich agricultural region of the lower Nile. Like the Nile, the Colorado rises in a distant mountainous country, its lower courses traverse a subtropical and nearly rainless desert, and both rivers empty into great landlocked arms of the ocean at about 32° north latitude. Like the Nile, the Colorado is subject to a great annual summer rise sufficient to overflow large areas of its delta and border lands, which are heavily fertilized by the rich sediments brought down by the flood. Similar climatic conditions complete a resemblance which makes possible the production along the Colorado of many of the staples of the Nile, such as alfalfa, wheat, grains of the sorghum class; the date palm, fig, orange, olive, and pomegranite; Egyptian cotton, melons, and sugar cane. The future

of this district is undoubtedly a great one, though it will take some years to institute those works necessary to its development.

*The agricultural experiment station.*—In a new country, rapidly filling up with settlers from regions of a different agricultural character, an agricultural experiment station may make itself useful to an unusual degree. The problems presented to the newly arrived southwestern irrigator are largely foreign to his experience and difficult of solution. Reliable information, therefore, relating to soil, irrigating waters, crops, live stock, methods of farming, etc., are demanded and appreciated by our farmers.

The Arizona Station is so organized and its work so distributed as to render all possible service to the various phases of agriculture in the Territory. The administrative office and the scientific laboratories are located in the University main building at Tucson. The range reserve for the study of grazing conditions is suitably situated immediately southeast of Tucson. The station farm, where agricultural, horticultural, and stock-feeding work is carried on, is situated near Phoenix, in the midst of the largest farming district in the Territory. The date-palm orchard is 3 miles south of Tempe, Ariz., in an alkaline district, where a successful demonstration of the culture of this tree will create value for tens of thousands of acres of otherwise worthless alkaline lands throughout the Southwest.

The publications of the station, including bulletins and Timely Hints for Farmers, touch upon a wide variety of farming topics of interest to southwestern irrigators. The Timely Hints in particular, combining scientific and popular character, have proved useful to farmers, and may be had by request from the Experiment Station, Tucson, Ariz.

#### FERTILE VALLEYS.

There are many very fertile valleys in this Territory, and scarcely one exists that does not possess claims worthy of the attention of the United States Geological Survey. Irrigation is practiced by means of diverting the water that runs in the streams and is successful only during the favorable years. The number of acres of land under cultivation in these valleys varies from year to year according to the supply of water available. There are excellent reservoir sites located in the mountains near these valleys which might be utilized by the expenditure of a few hundred thousand dollars. In order to bring the greatest area of land under cultivation it would seem necessary that attention be given to these smaller valleys and small dams constructed where conditions warrant. Descriptions of the different valleys in the Territory follow:

*Salt River Valley.*—In this valley, the largest in the Territory under cultivation at this time, absolute dependence is placed in the supply of water that is carried by the canals from the Verde and Salt rivers. If reliance were placed on the natural rainfall there would be no crops, for, during the past fiscal year, the rainfall has been scarcely nothing at all. In fact there has seldom been a year of such prolonged drought. This valley is in excellent condition when consideration is given to the extreme discouragements its people have met with. It is perhaps one of the richest agricultural areas in the United States, and under reservoir conditions will become a field of labor where certain return is guaranteed.



There are 260,000 acres of land in the Salt River Valley susceptible of irrigation. At the present time there are perhaps 115,000 acres under cultivation. Owing to the scarcity of water under the present system of supplying it full crops are seldom yielded, if ever. With full crops from the lands at present under cultivation the output would be many times greater than it is to-day. It is expected that the land now under cultivation will be augmented in area by the thousands of acres of desert land in the valley when the Government dam is completed at Tonto and water stored for delivery.

The report of Mr. J. O. Dunbar, immigration commissioner of Maricopa County, deals with the manner of irrigation in the Salt River Valley. Mr. Dunbar reviews the subject as follows:

Tillage of the soil by means of irrigation possesses many advantages over dependence on the natural rainfall, as water may be applied when needed and withheld at will. Lands under irrigation yield more abundantly and produce more uniform crops than those which must look to an uncertain rainfall for moisture, and hence are much sought after and command the highest prices paid for farming land.

There are abundant evidences that southern Arizona was once densely populated by prehistoric races, but whence they came and whither they went are unsolved mysteries; but the ruins of great cities and massive temples bear mute testimony to their civilization, skill, and industry, while the ancient canals which they built, and which may still be traced from the mountain water courses for miles and miles out across the deserts in every direction, reveal to us that they were expert irrigators, and were dependent upon irrigation for sustenance in those hidden ages as we are to-day.

The prehistoric irrigation systems of Arizona were probably among the most ancient in the world, and the waters of her mountain streams have been utilized in the valleys below by each succeeding race inhabiting the country down to the present time.

The Pima Indians are the earliest irrigators in the Territory of whom we have any authentic record. When Coronado explored this region almost four centuries ago these people were found farming the lands of the Gila and Salt River valleys by the aid of primitive irrigating ditches just as their descendants are doing to-day.

In other sections irrigation is merely a help to the farmer in the production of his crops, and only serves to increase his harvest; but in southern Arizona it is an absolute necessity, as nothing whatever can be raised without it. Hence those engaged in business in the cities, and in the professions, are equally interested in irrigation with the farmer. There could be no settlement in the Salt River Valley if it were not for the canals, and consequently no towns, save those supported by the mines in distant hills.

The canal is the dividing line between the barren desert waste on the one hand, and the luxuriance of a semitropic garden on the other. No more bewildering transformation scene of the magicians' art can be imagined than that produced on an Arizona desert by the application of a little water.

Modern irrigation in the Salt River Valley began about the year 1866, when a few hardy pioneers settled along the north banks of Salt River, near the present site of Phoenix, and dug the Griffin and the Swilling ditches, the latter having its head about 6 miles east of Phoenix, and near the present dam of the Maricopa and Salt River Valley canals. These first canals were community property, each farmer owning one or more shares and working out his assessments for maintenance. But it was found that a few failed to perform their proportion of the work, which increased the burdens of the others, and so it was decided a few years later to incorporate, and thus put every stockholder on even footing. The Swilling ditch had been enlarged and extended, one branch running to the northwest and watering the land north of Phoenix, while the other flowed due west through the town and covered the lands toward the river.

The Maricopa Canal Company and the Salt River Valley Canal Company were incorporated in 1875 by the stockholders in the Swilling Canal, who transferred their appropriations in the latter ditch to the new companies and received in lieu thereof stock in these companies. The Maricopa Company succeeded to the north branch of the Swilling ditch and the Salt River Valley Company to the south branch. These canals were enlarged and extended until they reached very nearly to the Agua Fria River. They have continued to maintain a joint dam and head as a matter of economy.



A few years later the Grand Canal was built, heading some miles above the other dam, and reclaiming a strip of the desert lying above the Maricopa Canal. In 1886 the Arizona Canal was completed. It has its head in Salt River, 28 miles above Phoenix, at the eastern base of the McDowell Butte, and flows westerly and north-westerly along the base of the mountains, forming the northern borders of the valley, for a distance of 45 miles to the Agua Fria River, which is the western boundary of the irrigated valley.

Shortly after the completion of the Arizona Canal the Arizona Improvement Company was organized by eastern and western capitalists, and a controlling interest bought in the four canals, viz, the Arizona, Grand, Maricopa, and Salt River Valley, and the general management of the entire system was brought under one head, although each corporation remained independent and distinct. The Arizona Improvement Company was succeeded in 1899 by the Arizona Water Company, which now dominates the four canals watering the north side, William B. Cleary being the general manager of the system.

This consolidation of conflicting interests has proved a great benefit to the entire valley, as it permitted a more economical distribution of the water, and during the severe drought of the past four years prevented any section of the valley being wholly deprived of water.

The valley on the north side spreads to the west like an open fan, the terminus of the Arizona Canal being almost 20 miles north of Salt River, and it contains about 150,000 acres of irrigable land. The four canals named traverse it in parallel lines on successive levels, rendering the irrigation of the land easy and economical.

The water is delivered from the main canals to the lands to be served through lateral ditches flowing south and west along the section lines, the declivity being toward the river and just sufficient for thorough irrigation. It is doubtful if another irrigated valley of equal extent can be found in the world with so smooth and uniform a surface, and yet possessing a general slope that furnishes perfect drainage and reduces to a minimum the cost of distributing and applying the water to the land. On but a few sections in the entire valley has it been found necessary to employ a leveler. All that is required are low borders or ridges thrown up 30 to 50 feet apart across the field and the water turned on at the upper side. The irrigator may then sit in the shade and literally irrigate by the clock. This method of flooding the fields is employed for grain and alfalfa, but in the vineyard and orchard trenches are usually dug between the rows and the water permitted to flow through until the soil is thoroughly saturated.

The method of irrigating orchards that has proven most satisfactory is by a series of deep and wide trenches between the rows of trees, with gates at each end, so arranged as to impound the water when the ditches are filled and hold it until it has been taken up by the soil. The surface of the ground is covered with a growth of native grasses, or by a light layer of straw, which protects the earth from the heat of the sun and retains the moisture which rises from the subirrigation, and thus prevents the soil from baking. No cultivation is necessary where this system is practiced, and the results obtained are most satisfactory, both in the growth of the trees and the yield of the fruit.

In many orange groves sour clover is sown broadcast and permitted to grow and mature on the ground, and the dead grass remains year after year as a protection from the sun and a fertilizer to the soil. Where this method is pursued the ground is flooded when irrigated, the water flowing under the carpet of grass.

The present system of distributing and applying the water to the land is primitive and not economical. Water is bought by the year by the miner's inch, and must be taken by the farmer in regular turn, whether needed or not, as a shortage may occur at any time, when but little water for irrigation can be secured. Hence, during the rainy season, water is frequently poured on the land to its detriment, and much water is permitted to waste in the public highways.

The canal companies on the north side have in contemplation a radical change in the method of distribution of the water, which will probably be put in operation when the storage reservoir is completed, and the supply of water rendered more uniform. Their water-right deeds all contain a provision for the delivering of water by the hour for a given sum per cubic-foot flow per second. By this system the farmer will pay for what he gets and only as he needs it, and naturally will practice the strictest economy. It is conservatively estimated that water will perform fully 25 per cent more service under this system than under the present method.

That the normal supply of water is made to perform the service that is required of it under present methods is due to the intelligent and systematic management of the canal systems, and is highly complimentary to those in charge of this industry. When it is remembered that the aggregate length of the four canals is 100 miles, and

that there are more than 400 miles of lateral ditches used in the distribution of the water each week, some idea of the magnitude of the undertaking may be gained.

Under all the canals of the Salt River Valley water is sold and delivered only to those owning or possessing water rights or shares of capital stock in the particular canal serving the lands sought to be irrigated.

#### SOUTH SIDE CANALS.

Lying along the south bank of Salt River, and extending some 25 miles above Phoenix, is a valley somewhat less in extent than that described on the north side and possessing many of the same characteristics. Five separate canal systems supply the lands with water, the method of distribution being practically the same as that already described.

The canals on the south side, in order downstream, are: The Highland, Consolidated (including the Mesa), Utah, Tempe, and San Francisco. Of these the Tempe is the oldest, having been first operated in 1871. The Utah is next in priority, followed by the Mesa. These are cooperative companies of water users. The Highland is incorporated; the San Francisco is a private ditch, owned by the Bartlett-Heard Company. The Consolidated Canal Company was organized for the purpose of enlarging and extending the Mesa canal system, and to supply lands lying to the east and south of Mesa City. That this work might be successfully and harmoniously carried on, the Mesa Canal was leased, and the entire consolidated system is managed by the new company through Dr. A. J. Chandler. These canal systems supply water to the country surrounding the towns of Tempe, Mesa, and Lehi.

Experience has demonstrated the advantages of rotation of water in the seasons of scarcity, and all the canals of the valley have adopted this system.

During the summer time, when the flow of the river is greatly reduced, instead of attempting to deliver to each farmer the few inches of water that he is entitled to continuously, a good irrigating head is run to him for a shorter time at regular intervals. This is much more satisfactory to the farmer, and effects a great saving in water, when every drop is precious.

There have been many disputes in the valley over the appropriations and distribution of water, as in all other irrigating countries, resulting in much litigation in the past. The rights of the various canals were determined by Judge Kibbey in 1890, and a water commissioner appointed to distribute the water daily to the various canal systems. This method is still in vogue, and has been satisfactory to the canal companies, and beneficial to the community, as justice is meted out to all alike, and in extreme low water each canal gets its proportion. It has prevented much vexatious and expensive litigation also.

The nine canals mentioned as watering the lands of this famed Salt River Valley, comprise one of the largest and most successful irrigation systems in the world. It is doubtful if the world can produce another of equal extent where so many favorable conditions are combined. In fact, there has been but one drawback, and that will soon be removed by the construction of the Tonto Storage Reservoir. At present the flood waters of the Salt River flow down to the sea and are lost. For two or three months each summer the normal flow of the river is not sufficient to supply water to all the lands needing it, and summer crops often fail in consequence.

Now that the flood waters are to be impounded, and reserved until needed in the valleys below, conditions will be as nearly ideal in the Salt River Valley as man may ever expect to enjoy on earth. The watershed supplying our canals is ample to produce all the water necessary during any ordinary year, being about 13,000 square miles, much of the territory embraced in it being elevated plateaus and mountain ranges, where abundant snow falls. The waters which rush down the mountain sides to the plains below carry large quantities of fertilizing material, which continually enriches the soil and renders the use of other fertilizers unnecessary, except in rare cases or for some special crops.

A special committee of the United States Senate reported in 1890 of the soil of this valley, that "An analysis shows its fertile qualities to be superior to that of the Nile earth."

And Orange Judd, after a visit to the Salt River Valley, said editorially in the *Prairie Farmer*: "We have seen thousands of acres of growing crops that rival in luxuriance those found in the famed Valley of the Nile, which derives its vivifying liquid, bearing fertilizing elements, from the far-off lands of upper Egypt. This valley of the Salt River derives its luxuriousness from the mountain ranges of interior Arizona."

The storage reservoir which the United States Government is now constructing on Salt River, 60 miles east of Phoenix, will be one of the largest of its kind in the world.



*The Colorado River Valley.*—This is one of the most extensive valleys in Arizona, beginning above Needles and running southerly to the Mexican line. There is no greater area of irrigable land in Arizona than that in the Colorado River Valley. With Government assistance assured, the future of this valley is exceptionally promising. Thousands of acres of fertile land will be reclaimed by the diversion of the waters of the Colorado River. This favored section has not been inaptly designated as the valley of the American Nile, and its present growth is a fair indication of future prosperity under favorable conditions.

For the past few years the valley has slowly but steadily been peopled with a persistent, sturdy class of home seekers bent on reclaiming the rich, virgin soil from the mesquite and sagebrush, their efforts resulting in prosperous farms dotting the site of the primal desert growth.

At the present time there are 4,000 acres of land under cultivation, making an increase of 1,000 acres during the past year. There are, however, about 45,000 acres under the various canal systems susceptible of irrigation, and the cultivated area bids fair to largely increase during the coming year.

The principal methods of irrigation are by gravity and pumping, the following named being the canal companies supplying water in the valley: The Colorado River Pumping and Irrigating Company, The Yuma Land and Water Company, and the Irrigation Land and Improvement Company. In addition to the water systems mentioned, a new company, the Colorado Delta Canal Company, has purchased the rights of the Speese canal, and as soon as certain agreements with the landowners under the proposed canal are completed will extend and enlarge the waterway.

The new canal will have its main head at Cocopah Point, about 25 miles above Yuma on the Colorado River. This system will take in the mesa lands and will, when completed, greatly increase the irrigable land.

The Yuma Water and Light Company has in successful operation a pumping plant, which supplies water for the company's fruit ranch on the mesa near Yuma. While the area cultivated by the pumping plant consists of only 80 acres, the company has had great success in raising early citrus fruits. The company this year netted very handsome profits from the sale of oranges, lemons, apricots, grape fruit, and vegetables, supplying the markets of Arizona and California from two to four weeks earlier than the southern California fruit belt.

The soil of the mesa lands is especially adapted to raising citrus fruits, the valley soil being best adapted for deciduous fruits.

The valley soil is a sandy-loam deposit and has a uniform depth of 7 feet. Water can be obtained at almost any point in the lowlands at a depth of 12 feet.

The products of the valley are dates, almonds, walnuts, strawberries, raspberries, blackberries, gooseberries, grapes (all varieties), pears, peaches, apricots, figs, oranges, lemons, and pomegranates. Of cereals and grasses may be mentioned sugar and Kaffir corn, barley, clover, maize, sorghum, timothy, blue grass, and alfalfa. From six to seven cuttings of alfalfa can be obtained during a favorable year, averaging a fraction over 1 ton per acre each cutting.



It has been demonstrated that all fruits indigenous to the tropical or semitropical regions can be grown in this valley. Experiments have been successfully made with cotton, but owing to the cost of labor has not passed beyond the experimental stage. In the lowlands the sugar beet has been tested and found to contain a high percentage of saccharine matter. The raising of the sugar beet will no doubt be one of the future industries of the valley.

The population of the valley, exclusive of Yuma, is about 1,200 and is steadily increasing. As an evidence of the growth of the population it may be mentioned that there are now six schools in the valley, whereas there was but one three years ago.

One of the principal drawbacks to the rapid settlement and development of the valley, and a potent one, is that in the spring months during high water in the Colorado River much of the land of the valley is subject to overflow, thereby rendering otherwise very valuable land practically useless for cultivation. This condition of affairs can not be materially bettered until the Government comes to the assistance of the settlers by building a levee to the Mexican line.

The selection by the honorable Secretary of the Interior of the Colorado River project for the reclamation of the arid lands lying along that stream is pointed to as another step toward bringing Arizona out of the desert wilderness and making her valleys blossom in productiveness.

The Yuma project is now in the hands of the Yuma County Water Users' Association, and I am informed by Mr. M. Winsor, president of that association, that sufficient signers have been enlisted to insure the success so earnestly desired. With the requirements of the Government complied with the ranchers may look for the boon which means so much to them and their section of the Territory, for there can be no doubt but that the Yuma project is recognized as one of the most feasible in the arid west.

Mr. Winsor informs me that it is the purpose of the water users' association to secure the irrigation of every acre of land embraced in the Yuma project, as outlined by the engineers of the Reclamation Service. The high expense per acre of the Yuma project, and the productiveness of the soil, necessitates the application of greater labor and time in farming than in colder countries with short seasons. This will have the effect of causing farmers to sell parts of their holdings and thus make more farms. Mr. Winsor predicts that under storage conditions the average size of a farm in the lower Colorado River Valley will not be more than 40 acres.

In addition to the Yuma project, or rather supplementary thereto, the engineers of the U. S. Geological Survey are now working upon plans to irrigate 10,000 acres of mesa land east of Yuma. The water will be pumped by power generated at the falls to be created by the consummation of the larger proposition on the Colorado River. A steam pumping plant is proposed for use when the other power is required for other purposes.

*Santa Cruz Valley.*—Great irrigation possibilities are presented in this valley, and I believe there is a field for research by the Geological Survey there promising rich returns. The development of the underground water supply would, in my judgment, give an abundance of water for the thousands of acres of fertile lands in that valley. I am

pleased to observe that the attention of the Geological Survey has been turned to the Santa Cruz and San Pedro valleys during the latter part of the year.

The Santa Cruz is one of the most extensive valleys in Arizona, and agriculture is carried on to a considerable extent. The watershed is composed of mesa and mountains, the latter rising to a height of 7,000 feet. The river supplies water for irrigation purposes throughout the year, but during the dry season the supply is, of course, very small and inadequate. There is, however, a subcurrent of water capable of supplying sufficient flows for irrigation purposes if carried on on a small scale.

*The Middle Gila and Casa Grande valleys.*—The construction of the San Carlos dam is the ultimate salvation of this section of the Territory, where the water supply for several years has been an almost complete failure. There are thousands of acres of irrigable lands which could be made profitable in agriculture and stock raising.

Under the Casa Grande Canal there are 25,000 acres of land claiming water rights, scarcely one-fifth of which is enjoying water at the present time from this canal. Many farmers have been compelled to give up their lands and seek other fields, where the profits in agriculture and stock raising were more secure.

Stretching from Florence south there is a vast area of irrigable land which would be brought under cultivation by the construction of the San Carlos dam. This project has received considerable attention from the Geological Survey, and it is one deserving of further investigation.

*Kanab Valley.*—Fredonia is the center of population and agricultural activity in Kanab Valley. The town is situated about  $3\frac{1}{2}$  miles south of the Utah line, and about 7 miles from Kanab. There are about 25 families located here, all engaged in agriculture and horticulture.

Water for irrigation purposes is taken from Kanab Creek, one-half mile north of Fredonia. During the months of June, July, and August the supply is limited, and during these months water is most needed by the farmers. There are about 300 acres of land under cultivation, alfalfa being the principal crop. There are thousands of acres of fertile land that might be brought under cultivation by means of water storage, as during the winter months water sufficient to irrigate vast areas goes to waste.

All kinds of small grains are raised in this valley, and fruit grows successfully. Apples are a sure crop, and peaches, although damaged by frosts during the past two years, are usually profitable and successfully raised.

Stock raising is carried on in a profitable manner. This valley is regarded as an excellent place for stock, although of late years the ranges have been overgrazed by sheep and cattle from Utah. However, since the reserve was created the valley is not overrun with large herds of sheep from across the line, and the prospects are bright for this section of the Territory.

*The Buckeye.*—The Buckeye country is located about 25 to 50 miles southwest of Phoenix, along the north side of the Gila River, and is irrigated by the Buckeye Canal, which is taken out of the Gila River about a mile below the mouth of the Agua Fria, and about 6 or 7 miles below the mouth of the Salt River, thus getting the underflow from all these rivers.



The dam is made of rock blasted from a granite mountain nearby and hauled to the dam on cars. This dam has been greatly improved by the present owners of the canal by the expenditure of a large sum of money in strengthening and widening the dam, so it is really a rattle in the river in the time of high water.

The canal is about 22½ miles long, and will carry about 8,000 miner's inches below the wash gates.

The amount of water at the low season of the year seldom, if ever, gets below 4,000 inches at the dam. This condition only exists about two to two and one-half months, until the water in the Gila and Agua Fria rivers rises, and then there is an absolute abundance of water for all users.

There are 17,000 acres of land under this canal, but only about 11,000 to 12,000 acres are actually under cultivation. The soil varies in different parts of the valley, and is very correctly described by the soil map issued by the United States Government. Alfalfa is the main crop raised, and as there is an abundant supply of water at all times this crop grows to perfection. Most ranchers cut the first crop, and some the second, and pasture the remainder of the year.

The valley has an excellently equipped telephone system which reaches nearly every ranch under the canal. There is also a stamp mill located at the town of Buckeye which handles ore from the mines in the southern part of the White Tank Mountains, where there are some splendid prospects.

There are four schoolhouses located in the valley; one church has been built, and one is in course of construction, and church services are held in two of the schoolhouses. The greatest need in this section is railroad facilities.

The improvement in this particular section of Arizona has been very rapid during the past three years, and it is at present one of the richest and most fertile sections in the West.

*Arlington Valley.*—The Arlington Valley lies about 50 miles west of Phoenix, on the north side of the Gila River. It embraces about 5,000 acres of fine farming land, 3,000 acres of which are now under cultivation, the most of it being devoted to raising alfalfa. Cattle feeding and the production of alfalfa for the market are the chief industries in this valley.

The Arlington Valley receives its water supply for irrigation from the Gila River, the water being carried to the lands by means of a canal known as the Arlington Canal; this canal being 15 miles in length and its carrying capacity 3,000 miner's inches of water. The canal is owned and operated by the owners of the land in the Arlington Valley. The cost of water delivered to the land is \$1.25 per acre. This price will be decreased when the canal shall have been placed in first-class condition.

About \$1,300 was expended in placing a syphon across the Hassayampa River. The syphon is now delivering water with perfect satisfaction to the company. The syphon is made of redwood lumber and is 300 feet in length and 4 by 6 feet in the clear, the bottom of the syphon being 8 feet below the surface of the river.

*The San Pedro Valley.*—The San Pedro Valley begins near the Mexican line and extends in a northerly direction until it meets the Gila Valley in Pinal County. Agriculture is carried on in the San



Pedro Valley extensively, and the valley is thickly settled. Alfalfa is raised for cattle feeding and other pasture purposes, and considerable barley and wheat are produced. There are many substantial ranches throughout the valley. This valley, though unusually narrow, is extremely rich and fertile and has two sources of irrigation, i. e., the San Pedro River and artesian wells. It created and supports the towns of St. David and San Marcos, and furnishes Fairbank, Tombstone, Bisbee, Naco, and Douglas with a great proportion of the hay and grain and vegetables used. Fort Huachuca is also a heavy consumer of the products raised. The fertile lands will average from half a mile to a mile in width, and already there are at least 5,000 acres under cultivation, with such acreage increasing greatly yearly. Ditches from the river are used in irrigating the bulk of the land, but artesian wells play an important part especially from the north end of the Boquillas land grant, near St. David, to Benson. There is no doubt that the artesian flow exists throughout the valley, as wells were recently sunk successfully beyond the south end of the Boquillas grant. Artesian water is struck at an average of 400 or 500 feet, but at that depth the flow is not strong, usually 1 to 2 inch pipe being used. Those depending on artesian water construct earth reservoirs, the soil readily holding the water almost as securely as cement tanks.

At points along the river, notably at and near Charleston, nature has assisted in making fine reservoir sites. Sufficient water could be impounded there at a minimum expense to irrigate all the land not now under cultivation as far north as Benson, twenty-odd miles away. Owing to the fact that the mining towns above mentioned are almost contiguous to this valley, every pound of produce raised sells at the highest market rates for cash. In the way of vegetables almost every variety is grown with success. Potatoes and beans are particularly fine and choice. Melons, both water and musk, are raised in profusion, and they are extra high grade, sound and delicious in flavor. Strawberries are also raised to a limited extent, and what are marketed can not be excelled in quality. Very little has been accomplished in the way of planting fruit and nut trees, but a start has been made and the indications are that certain varieties will thrive exceedingly well and insure regular crops. The San Pedro Valley in altitude is probably as high, if not higher, than any other valley in southern Arizona, and untimely frosts do not seem to be as severe or persistent as in those of a lower range. The bed of the river being ordinarily deep in comparison with the width, the water therein seldom causes any serious damage by leaping its bounds. Disastrous overflows are unknown and never calculated upon by the farmers.

*Valley of the Little Colorado.*—In and around St. Johns the farmers have always had to contend against the numerous mineral springs which are scattered along the banks of the Little Colorado River for 15 miles above St. Johns. These mineral springs are in many respects remarkable, and the volume of water discharged from them is so great and the water is so strongly impregnated with mineral that the Little Colorado River partakes of the nature of these springs most all the year round. It is only during the rainy season and when the snow melts in the mountains in the spring and we have fresh-water floods that there is any perceptible change in the character of the water that reaches St. Johns for irrigation purposes. During the past six to ten years the snowfall in the mountains in the winter and the rainfall in

the summer has been so light that they were insufficient to counteract the evil effect of the water from these springs upon cereal vegetation.

To give you an idea of the capacity or extent of these springs the smaller of them are about 10 feet in diameter at the surface and 50 to 60 feet deep. The larger springs are more than 20 feet in diameter at the surface and have never been fathomed. Stockmen living in the vicinity of these springs have tied two and three 60-foot lariat ropes together and sounded them 150 to 180 feet without finding bottom. The flow from the springs is the same all the year round and the largest would fill a good-sized mill race.

There are about a dozen of these springs emptying into the Little Colorado River within 15 miles above St. Johns, and they are so strongly impregnated with mineral that it renders the land useless for raising any of the cereals. Alfalfa has withstood the baneful effects of this mineral water for twenty years, but the farmers say that the water is beginning to tell upon their alfalfa, killing it out in places and greatly reducing the crop in tonnage as compared with former years, when heavy snowfall prevailed in the mountains in the winter and a good rainy season set in in the summer.

In and around Springerville, situated about 30 miles south of St. Johns, at the foot of the White Mountains, is the garden spot of Apache County. They have no mineral springs to contend with, all their water being pure mountain and rain water, but owing to adverse climatic conditions agriculture in this section has been almost a total failure for the past ten years. In former years when we had good seasons there would be about 5,000 acres of land under cultivation in and around Springerville, producing the finest crops of wheat, barley, and oats, the farmers having a large surplus to sell. This year there are not 1,500 acres planted in the whole section.

The acreage of farming land in Apache County is about 6,500 acres.

The crops produced are wheat, barley, oats, corn, and alfalfa, the only reliable crop for the last ten years being alfalfa; the most precarious and uncertain being corn, on account of the early frosts in the fall.

The water supply, if we are ever so fortunate as to get our reservoirs filled, is five times in excess of our necessities. There are six reservoirs in the White Mountains above Springerville, four of which are natural, the water being run into natural basins from the river; the other two are made by damming the river. The irrigation capacity of the six reservoirs is 6,000 acres.

There are three reservoirs between Springerville and St. Johns, two of them natural, with a capacity of 1,500 acres, and one artificial, made by damming the river, with a capacity of 17,000 acres.

There are two reservoirs below St. Johns, one natural, with an irrigation capacity of 1,000 acres, and one artificial with an irrigation capacity of 8,000 acres.

The total capacity of Apache County reservoirs is 33,500 acres, yet, owing to unfavorable conditions prevalent for the last ten years, 90 per cent of the farmers of this county have had to buy their flour and seed grain every year.

#### IN NAVAJO COUNTY.

The Little Colorado River, with its source 125 miles to the southeast, in the Mogollon Mountain range, flows from east to west through the



county near its center and is replenished by numerous streams, the principal ones in the county being Silver Creek and the Show Low. The many irrigated districts along their banks in this and adjoining counties attest to the wonderful productiveness of its soil wherever water has been systematically applied, changing the desert into many self-supporting happy homes.

Entering the county from the west via the Santa Fe Railway, within 3 miles of the western boundary, is the thriving railroad town of Winslow, where an irrigation system has been constructed in recent years whereby 520 acres have been redeemed to agriculture, producing tons of forage and cereals, the accomplishment of which a few years ago was considered incredible.

St. Joseph, 20 miles east of Winslow, was one of the first settled and irrigated districts of the county. One mile south of the present location is the old "Fort," so called because the houses built of stone formed a square opening out on to a plaza, the fourth being on a lake of water. By this means the early settlers had protection from the prowling, murderous Apaches and Navahos, who had little sympathy with the white invader. The St. Joseph of to-day has well-shaded streets, handsome brick and frame residences surrounded by gardens of flowers and vegetables, and 800 acres of alfalfa, wheat, and cereals, while its acres of luscious melons would delight the appetite of an epicure, and it is still expanding. More than 100 acres of virgin soil have this year been turned by the plowshare, and is now returning more than its hundredfold to the industrious husbandman. The system consists of two reservoirs, created by the erection of dams in the Little Colorado River, from which 17 miles of canals conduct the water to the soil. There is in contemplation the building of a reservoir for the catchment of the flood waters, which will very largely increase the present supply and add 500 to 700 acres to the area now under cultivation.

All this was accomplished by the indomitable energy of one man, who enlisted a few of his neighbors and almost alone started the work of erecting a dam on Clear Creek, 9 miles from the land he wished to supply. Many believed it to be a waste of time, money, and energy, but so successful has been the venture that others have become interested and they have constructed a reservoir on the Chevelon, and built a canal 18 miles long which, combined with the former, has increased the water supply to such an extent that the near future will see the Winslow system one of the largest in northern Arizona.

St. Joseph, 20 miles east of Winslow, was one of the first settled and irrigated districts of the county. One mile south of the present location is the "old fort," so-called, because the houses built of stone formed a square opening out on a plaza, the fort being on a lake of water. By this means the early settlers had protection from the prowling, murderous Apache and Navajo, who had little sympathy with the white invader. The St. Joseph of to-day has well-shaded streets, handsome brick and frame residences, surrounded by gardens of flowers, vegetables, and acres of alfalfa and wheat.

The undercurrent throughout the valley is abundant at easy depths and has been utilized by some of the settlers in beautifying their residence grounds to such extent as to demonstrate what a more general and extensive system would accomplish. Being situated similarly to, and in some respects more favorably than, other successfully irrigated



districts in the county, is additional evidence of the claim made that abundant success would follow the development of Holbrook's latent resources.

Woodruff, 12 miles southeast from Holbrook, is peculiarly situated on the Little Colorado River at a break on the east side of a canyon which begins near Snowflake, 30 miles distant, whereby an opening of 1,500 acres of valley land intervenes to the south and east of Woodruff Butte, a landmark of the country that can be seen for many miles from all directions.

Over 1,000 acres are now producing the usual crops of this locality, with orchards, gardens, flowers, and neat comfortable homes everywhere abounding as a reward for the perseverance of their owners, who have constructed the reservoir and 9 miles of canal and laterals which conduct the water to their arid lands.

The Snowflake and Taylor irrigation system is the most extensive and complete in the county, partly on account of its being so highly favored by nature in area, and on account of its water supply. The source of the water supply is Silver Creek and Show Low, two streams rising in the high altitudes of the White Mountains and fed by its thousands of springs.

Land is cultivated to the extent of about 2,000 acres, with a like amount that is annually tilled as "dry" farming, the snows of winter and the rains of summer affording sufficient moisture to grow all the hardy cereals and root crops, especially potatoes and cabbage, which can not be excelled. The great need of this section is transportation. The best information to be gained places the area of "dry" farming in the mountain region in the south end of the county at 3,300 acres.

*The Gila Valley.*—The Gila Valley extends from the Gila Canyon, near the junction of the San Pedro River, westerly to the east bank of the Colorado, a distance slightly exceeding 250 miles. That portion of it situated in the county of Yuma, known as the Lower Gila Valley, is about 100 miles long and from 2 to 10 miles wide, all of which is susceptible of profitable cultivation. The river from which it takes its name cuts the valley in two. Its watershed extends some 30 miles north and upward of 50 miles south of its channel, the land from either extreme inclining more or less rapidly toward the stream. The Gila traverses a marvelously fertile country, very great in extent, and splendidly adapted to the cultivation of nearly all the products of the temperate and semitropical zones, besides many of the fruits common in the Tropics. Nor is it longer a matter of idle speculation, for flourishing ranches in many portions of the valley, drawing water from several important canals, amply demonstrate the magnificent results that will ensue should the water supply be rendered permanent, equable, and adequate through appropriate storage systems.

What is commonly known as the "Middle Gila Valley" is located in the central part of Graham County, at an elevation of about 3,000 feet above sea level. It is something like 40 miles long and will average probably 10 miles in width. Owing, however, to the lack of a requisite water supply, the area now under cultivation will not exceed an average of 2 miles in width by 40 miles in length.

The land is, generally speaking, a rich sandy loam, some of it, however, being mixed with more or less clay, which, under the almost magic touch of the industrious husbandman, becomes very productive, land which has been cultivated for more than twenty years yielding as

abundantly to-day as in the beginning, and that, too, without the application of any fertilizer other than the sediment of the Gila River, which is washed out upon the land during high water, making it as rich and productive as the lands built up by the overflow of the historic Nile.

The above-named Gila River is the chief source of our water supply. It is a perpetual stream, impossible to drain for the reason that very much of its flow is underground and, owing to the long continued irrigation of the adjacent lands, a large amount of water is constantly seeping into the channel from either side, and, as a result of these conditions, a few rods below a tight dam will be found a good running stream, some of the lower canals furnishing a larger and much more regular supply of water than those heading higher up the river.

There are now probably 28 canals conveying water from the Gila River to the lands in this valley and irrigating approximately 50,000 acres, for which they furnish an abundance of water for ten months in the year, a shortage sometimes occurring during parts of May, June, and July. These canals vary in size from 3 to 12 feet in width and from 2 to 15 miles in length, and are all owned and operated by farmers to whose lands the water is conveyed.

The principal crops of the Gila Valley are wheat, barley, and alfalfa, about 15,000 acres being devoted to each of the above-named products. Wheat is planted at any time between October and March and with from three to five irrigations can be harvested early in June, yielding about 35 bushels to the acre, and this finds a ready market at from \$1.25 to \$1.75 per hundred pounds. The planting season for barley is practically the same as wheat; it will, however, mature ten days to two weeks earlier, and therefore requires one irrigation less and makes an average yield of 45 bushels to the acre, selling readily at from \$1 to \$1.50 per hundred pounds.

Alfalfa is cut four and five times a year, and will probably average six tons to the acre each season, in addition to furnishing good pasture for stock during the winter months. It requires at least one good irrigation each time it is cut, and on some of the land even more than that. The thousands of tons of alfalfa grown in the valley find a ready market at from \$6 to \$10 per ton in the surrounding mining camps of Clifton, Morenci, Globe, Bisbee, and others.

Corn does well, yielding from 50 to 60 bushels to the acre, the small amount planted being accounted for from the fact that June is the best month in which to plant corn; and it being the driest month in the year, it is difficult to secure sufficient water to keep the other crops growing and at the same time water any great amount of corn land; but whenever water can be secured, a good crop of corn, cane, or beans can be readily grown upon the same land that has already produced a crop of wheat or barley.

The two-crop system does not seem to injure the land, for every year during the summer rains the river water carries large quantities of fertilizing materials which seemingly keep the land continually renewed, and should the ground show signs of wearing out in consequence of continual cropping, it can be entirely renewed in a very few years' time by planting it to alfalfa.

The fruit-growing industry is just in its infancy, very little having yet been attempted in that direction. Enough, however, has been done to establish the fact that apples, peaches, apricots, plums, and



grapes of a very fine quality can be profitably grown for the market, there now being some few such orchards and vineyards on a good paying basis.

Experiments have been made in sugar-beet culture which have resulted most satisfactory, showing that the soil is well adapted to their growth, both as to an abundant yield and richness in saccharine matter.

There are in the Gila Valley approximately 100,000 acres of uncultivated land which would be nearly or quite as productive, could it be reclaimed, as any now being cultivated; this, however, can only be accomplished by the conservation of the flood waters which are now permitted to rush on unchecked to the ocean or by more fully developing the artesian water possibilities of the valley, either of which can be readily accomplished through governmental aid or the interesting of sufficient outside capital.

While it is quite generally believed that artesian water can be secured in any part of the valley, if sufficient depth be reached, still the fact remains that all the wells so far developed are confined to what is locally known as the artesian district, comprising a strip of country probably averaging 2 miles wide and 20 miles long and lying on the south side of the valley near the foothills of the Graham Mountains. There are now in this district about forty flowing wells. Most of them are small and without casing, and as nearly as can be determined, they have an average flow of about 75 gallons per minute; some few of the best, however, yielding more than double that amount.

The land is productive, and there seems to be no injurious effect to vegetation from the use of the well water. The average depth of the present wells is about 600 feet, the deepest one being something over 1,000 feet. In a few instances the volume of water has diminished since the wells were sunk; this, however, is attributed to the fact that such wells are not cased and are continually caving in more or less, the few wells that are cased the entire depth never having failed in the least.

The principal towns are Solomonsville, the county seat; Safford, Thatcher, Central, Pima, Eden, and Fort Thomas, all of which are thriving, prosperous, farming towns. The business blocks, residences, and farmhouses are, generally speaking, commodious, substantial buildings constructed of well-burned brick.

*Duncan.*—The Gila River rises in southwestern New Mexico, and has a generally southwesterly direction until it crosses the Territorial line into Arizona at about 32° 40' north latitude. Its principal sources of supply are from the Black Range on the east and from a number of ranges on the west, including Little Range, Mogollon Range, and Diablo Range. The average elevation of these mountain peaks is from 9,000 to 10,000 feet. The general character of the country is a high and rolling plateau, with the river flowing through it in a deep canyon, and with practically no agricultural lands within its area. The river emerges from its upper canyon about 10 miles before it reaches the Arizona line, and thence flows through a valley of considerable width, known as Duncan Valley, until just before it receives the waters of San Francisco River. In Duncan Valley a number of ditches divert water for irrigation purposes. San Francisco River, the principal tributary of the upper Gila, has its source in the northeast corner of Graham County, Ariz., but 15 miles below it passes into



New Mexico. Its general course is thence southerly, returning into Arizona at about 33° north latitude. The area drained is high and mountainous, the principal ranges being the San Francisco, the Tularosa, and the western slope of the Mogollon, with elevations ranging from 8,000 to 10,000 feet. The course of the river through this portion is characterized by a succession of canyons alternating with valley-like openings, with a fall of about 35 to 40 feet per mile.

*Kirkland Valley.*—This valley contains about 2,000 acres of irrigable land, a very small portion of which is now under cultivation owing to the scarcity of water. During years of plentiful rains the entire area of the valley can be brought under cultivation and crops raised. Alfalfa hay, and Sacaton hay and barley are raised. Fruits are also cultivated with great success. It is said that the finest pears produced in the Southwest come from the Kirkland Valley, and it is a matter of regret that but a small number of orchards exist there. This valley is in Yavapai County and has the advantages of railroad facilities. Kirkland Creek traverses this valley.

*Thompson Valley.*—This is a small valley of 700 acres or more, something over 200 acres being under cultivation at present. Fruits are raised and agriculture is carried on successfully. Being located close to the mines in the mountains good prices are obtained and a ready market afforded for all produce.

*Peoples Valley.*—With an extensive area of rich land this valley is one of the most important in Yavapai County. There are in the neighborhood of 3,000 acres of land that can be irrigated, and fully half of it is cultivated almost every year. The valley is famous for the corn produced, and beans are also grown with success. Alfalfa provides pasture for cattle and other stock, besides being a commodity for the market in the shape of hay.

*Skull Valley.*—There are about 700 acres of land in this valley susceptible of cultivation, and many prosperous ranches exist. Hay and grain are produced and some fruits are raised. Settlers depend upon the rains and melted snows to provide water for the crops, and no irrigation by means of diverting water from running streams is carried on. Excellent apples, peaches, and pears are raised.

*Williamson Valley.*—There are perhaps 5,000 acres of land in this valley. During favorable seasons crops of potatoes, corn, and other vegetables are raised. The most of the settlers are engaged in stock raising, and the principal use to which the land is put is the pasturing of stock. This valley is in Yavapai County.

*Rillito Valley.*—Located north of Tucson, in Pima County, the Rillito Valley produces vegetables, fruits, hay, and grain, and other products for the Tucson market. Excellent strawberries are produced there, and the watermelon and muskmelon are unsurpassed. It is a narrow valley skirting the foothills of the Catalina Mountains and extends for many miles. There are many substantial homes there, and each year adds to the acreage under cultivation.

*Sulphur Springs.*—Agriculture is practiced but little in the Sulphur Springs Valley in Cochise County. In the lower portion of the valley near the Mexican line some small ranching is done, and many of the cattle ranches contain small areas of cultivated lands. There are some excellent water-storage sites along this valley which would bring large areas under cultivation should the sites ever become utilized.

*Walnut Grove.*—The Walnut Grove Valley in Yavapai County contains rich soil which is utilized by the ranchers in that section to some extent. Gardening and fruit raising is carried on there, and small patches of alfalfa and grain cultivated.

*Verde.*—The Verde Valley in Yavapai County is a rich agricultural section, but owing to the small quantity of water obtainable but little land is cultivated. Hay and grain are raised for the Jerome and other markets and bring good prices. Fruits and vegetables are also cultivated with success.

*Cibola.*—Cibola Valley, so called after the name of the Zuñi villages of the sixteenth century, contains 25,000 acres of as fertile irrigable land as there is under the sun; 5,000 acres susceptible to annual overflow from the silt-laden Colorado and 5,000 acres too high to be irrigated, making 35,000 acres in all, the major portion of which is now beginning to blossom as a rose.

A colony of California agriculturists have recently become interested in the Cibola Valley, and have commenced the work of building homes there. They have planted beet fields, orchard groves, vineyards, and orchards of deciduous fruits.

This land lies, as the crow flies, 50 miles north of Yuma, 86 miles by river or wagon road, on the Arizona side, and 60 miles by the more direct route to Picacho, on the California side, and from thence on the Arizona side to the valley. The land is fertile beyond comparison with any but the land of the Colorado River, and will bountifully yield any crops suited to the climate of Yuma County, including all of those of the South Temperate Zone and many of those of the semitropic belt. For agricultural purposes the section is unsurpassed, for the cereal and hay crops, wheat, oats, barley, corn, sorghum, alfalfa, etc., are here in their element.

The Cibola Canal is 16 miles in length, 12 feet wide at the bottom, and 4 feet in depth after it gets out on the land. A heading has been secured where quicksand does not trouble, and one of the greatest obstacles to taking out gravity canals from the Colorado is avoided. The head gate has already stood the test of the high water.

The climate of the Cibola Valley is all that can be said of the section immediately surrounding Yuma. The dryness of the atmosphere renders sunstroke unheard of. Small game is in abundance, while the lagunas during the cooler months teem with ducks and geese, and the hills adjacent contain deer and mountain sheep.

#### FOREST RESERVES.

During the past year no forest reserves were created. The San Francisco Forest Reserve, created August 17, 1898, was enlarged by Executive order of April 12, 1902, so as to cover the sections owned by the Santa Fe Pacific Railroad Company, successors to the Atlantic-Pacific Railroad. The Black Mesa Forest Reserve was created August 17, 1898; the Prescott Forest Reserve was created May 10, 1898, and enlarged October 21, 1899; the Santa Rita Forest Reserve was created by Executive order of April 11, 1902, and is situated south and southeast of Tucson; the Santa Catalina Forest Reserve, created by Executive order of July 2, 1902, is situated northeast of Tucson; Mount Graham Forest Reserve, created by Executive order of July 22, 1902,

is situated northeast and south of Camp Grant Military Reservation; Chiricahua Forest Reservation, created by Executive order of July 30, 1902, is situated east of Tombstone, in Cochise County, and extends about 10 to 15 miles from the New Mexico boundary; Grand Canyon Forest Reserve was created by Executive order of February 20, 1893.

Four sections of land southeast of Tucson, in Pima County, were reserved during 1902 for an agricultural experimental station, and the director of the agricultural experimental station of Arizona has under way upon this land experimentations in the improvement of the ranges.

#### LABOR SUPPLY.

There have been no strikes or labor disturbances of any note during the year. The prompt action of the authorities in quelling the Morenci riots of the previous year, and the swift punishment of the strike leaders and rioters, has served as a beneficial lesson to that class who combine with a demand for higher wages riotous actions.

There are thousands of miners employed at skilled labor in this Territory, the wage rate being from \$3 to \$5 per day. The demand for miners is always fair, owing to the constant development of new mines in the Territory. The character of the laboring men is generally of a high order and they are in the main substantial citizens interested in the material welfare of the Territory.

Labor in most branches is organized throughout the Territory. The trade unions are conducted on a liberal policy of giving the most skilled workmanship for the hours employed, demanding only what is fair and just, and striving at all times to better the condition of the laboring men.

Eight hours is the legal period of employment in the Territory in underground work.

The construction of the Tonto dam has given employment to over 1,000 men, and the force there is increased as the work progresses. The laborers are for the most part skilled, although a great many common laborers are employed. The construction of the Yuma irrigation project will also be under way during the coming year and the demand for laborers will increase through this agency.

#### RAILWAYS AND TRANSPORTATION FACILITIES.

There has been more than usual activity in railway circles during the past year. The development of new mines has served as an impetus, demanding transportation facilities. The Arizona Southern has come into active existence during the year. The total length of this line is about 22 miles, the most of the construction having been completed at the close of the fiscal year. The road runs from Red Rock, on the Southern Pacific Railway, to the Silverbell mines.

The Bradshaw Mountain Railway was completed from Mayer to the Crown King mine on June 30, 1904, the total distance being 28 miles. The necessary buildings and other facilities have been provided and the road placed in active operation. This road places a rich mineral section of the Territory in easy access and will result in the development of many mines.

The Phoenix and Eastern Railway was placed in operation on February 1, 1904. The track is now completed to Kelvin in Pinal County,



a distance of 81 miles from Phoenix, where the road was started. The grade has been completed 20 miles farther toward the terminus of the road at Benson on the Southern Pacific.

The grade of the Arizona and California Railway is in progress west of Wickenburg in Maricopa County. It is the intention of the projectors to extend this line to the Colorado River as rapidly as conditions warrant, eventually terminating at a coast point in California.

Both the Bradshaw Mountain and the Phoenix and Eastern railways are owned and operated by the Santa Fe, Prescott and Phoenix Railway Company, whose main line extends from Ash Fork, on the Santa Fe Pacific, to Phoenix.

The Santa Fe, Prescott and Phoenix Company has improved the physical conditions of its property during the year to some extent. In addition to the three new locomotives received by the company in January of this year, the company has purchased three additional ones, which were delivered during the month of June. The company has also made improvements in its passenger equipment. It now has in operation on its lines 17 oil-burning engines. A storage tank for oil, with a capacity of 850,000 gallons, has been erected at Phoenix during the year. Additional roundhouses and shop buildings have been erected at Prescott and many minor improvements made.

The Atchison, Topeka and Santa Fe Railway has made extensive improvements in its property during the past year. This road traverses the Territory from east to west, passing through Apache, Navajo, Coconino, and Mohave counties.

During the past fiscal year the most of the work accomplished has been in replacing wooden bridges with permanent steel structures and laying heavier rails. Ninety-four miles of track have been reconstructed in this manner in Arizona. This improvement was demanded in order to afford proper roadway for the heavier power and equipment necessary to promptly and economically handle the increased traffic. The advent of heavier power has also made necessary large expenditures for additional tools and machinery in order that repairs can be expeditiously handled.

The general increase in traffic has necessarily called for increased water consumption. To meet this the company has expended approximately \$75,000 in Arizona during the year. Improvements have also been made in fuel-supply stations by reason of the adoption of oil in lieu of coal as fuel on the line between Seligman and Winslow on freight locomotives. This change required the expenditure of \$120,000 for reservoirs and other necessary facilities.

On the Grand Canyon Railway, also operated by the Atchison, Topeka and Santa Fe Railway Company, no extensions have been made during the year, other than the construction of a few additional side tracks at the Grand Canyon. There is in course of construction, however, by this company, a new hotel building at the Grand Canyon which will cost about \$150,000 when completed. The travel to the Grand Canyon has increased during the year, demanding accommodations for tourists.

Col. Epes Randolph, who is now president of the Gila Valley, Globe and Northern Railway, which runs from Bowie, on the Southern Pacific, to Globe, reports no improvements on that road during the past year. Colonel Randolph is also president of the Cananea, Yaqui River and Pacific Railway, a Mexico project, and the Arizona and Colorado Rail-

way, now in operation from Cochise, on the Southern Pacific Railway, to Pearce, the home of the Commonwealth gold and silver mine. No extensions have been made in the latter line during the year.

The Southern Pacific traverses the southern counties of Arizona, passing through a rich mineral, stock-raising, and agricultural section of the Territory. Tucson is the division point of the road in this Territory from which the local operations are directed. Mr. T. R. Jones is superintendent, with headquarters at Tucson. The railway shops are located at that point, where large numbers of skilled machinists are employed. The pay roll at Tucson each month is said to be \$150,000.

The company has followed the policy of improving its roadbed and track to meet the requirements of increased traffic, and in line with this have laid about 15 miles of new side tracks and reconstructed several portions of the line with a view of establishing better gradient and effecting more economical results in the handling of large volume of tonnage.

Incidental to the general increase in the weight of locomotives and rolling stock and the handling of larger train units, the Southern Pacific Company has found it necessary to make important renewals in bridges, and where economy justified it have replaced wooden trestles with steel spans and in small openings substituted concrete arch for other styles of culverts with a view of adding permanency as well as increasing the factor of safety.

The company has also found it desirable to develop a larger and more reliable water supply to meet the conditions and requirements above outlined, and have therefore erected large storage tanks at Tucson and Benson, constructed of steel and elevated high enough to give sufficient pressure for the economical handling of the water. These reservoirs have a capacity of 350,000 gallons each, and are supplied from existing wells. Other small tanks have also been erected, and the company has experimented with varying success in drilling new wells at different points on the division.

In anticipation of an increase in the amount of business, the company has now underway the erection of a large roundhouse at Tucson, which, with improved shop facilities, will greatly assist in the prompt handling of traffic.

The Southern Pacific Company continues to divert surplus supplies of fuel oil for the purpose of sprinkling its track and eliminate the dust nuisance, which has heretofore been one of the most annoying features of travel across the Arizona desert. The company hopes to complete the most of this work in the near future, and the results will be gratifying to the public as well as to the company.

The use of oil for fuel is being adopted as rapidly as possible to transform engines from coal to oil burners, and, in view of its greater economy, Superintendent Jones states that there is no question but that it will almost entirely supersede coal for fuel.

Mr. M. O. Bicknell, superintendent and general freight and passenger agent of the Maricopa and Phoenix and Salt River Valley Railroad Company, states that considerable progress has been made by this road during the fiscal year. The main line now enters almost the very business center of Phoenix, the road having been extended from Seventh street to First avenue. A branch, 2½ miles in length, has also been built from a point on the main line one-third mile south of Kyrene siding due east.



The company has taken-up 13 miles of 40-pound steel and replaced the same with 62-pound steel rails and new redwood ties. This 13 miles of track has been ballasted and oiled, at an expense of \$150 per mile. The company has also replaced  $1\frac{1}{2}$  miles of 40-pound rails on the Mesa branch with 50-pound steel rails.

A handsome passenger depot has been erected in the city of Phoenix, on the corner of Center and Jackson streets, at an expense of \$5,600, and a new freight station, 4 by 162 feet, has been erected on First avenue, between Jackson and Harrison streets, the cost of which was \$5,200.

In the immediate future 22 miles of 40-pound steel will be replaced with 62-pound steel rails on new redwood ties, and the entire mileage of the line will be oiled. A steel bridge will be erected over Salt River, the structure to be 1,300 feet in length, and will rest on concrete piers. One 160-foot span will be placed over the Gila River. The improvements made by this road during the year have been substantial, and the company is in excellent condition to carry on its increasing traffic.

The El Paso and Southwestern Railway Company has constructed during the year  $40\frac{1}{2}$  miles of new line between Forest Station and Lewis Springs, for the purpose of bettering the grades. The maximum grade on the old line was  $2\frac{1}{2}$  per cent, and on the new line 1 per cent. Among the improvements made along this line were: A new passenger station at Naco; a new passenger and freight station at Hereford; a new freight and passenger station at Bisbee; a combination freight and passenger depot at Osborn; a 15-stall brick roundhouse at Douglass. Fourteen new locomotives of modern design were purchased during the year and placed in service; 60 steel ore cars of large capacity were purchased and placed in service; new passenger equipment to the extent of 3 baggage, 3 standard coaches, and 2 parlor dining cars were purchased and placed in use. The company also fenced 50 miles of its line. The road is all standard gauge. The total mileage is 356.6 miles, of which 156.4 are in Arizona.

The Arizona Eastern, a projected line from San Carlos on the Gila Valley, Globe and Northern Railway to Sentinel on the Southern Pacific, has come into prominence during the year by reason of active work under way along the Gila River. A great deal of money has been expended in grading, and the assurance is given that this road will be completed to Phoenix within the coming year. The Southern Pacific is supposed to be the projector of the new line, and it is regarded as a movement to bring that system through the Salt River Valley. The surveying party was close to Florence at the close of the year, and work upon the grade was progressing at the eastern end of the proposed line. It is contended that this line will shorten the transcontinental route over 60 miles. It will reduce the percentage of grade considerably if this line is used to displace the one between Gila Bend and Bowie, which is not altogether probable. While the Southern Pacific without doubt has intentions of entering the Salt River Valley, I do not believe that the line between Bowie and Sentinel will suffer to any great extent. That route is too firmly imbedded, and the country it traverses is too richly developed to give even passing credence to the rumor of abandonment.



## TERRITORIAL PRISON.

The Territorial prison is located at Yuma. The annual report of the superintendent shows the condition of the prison and the general health of the inmates to be excellent. At the beginning of the fiscal year, July 1, 1903, there were in confinement 284 prisoners. At the close of the fiscal year there were 294 in confinement, showing an increase of 10 for the period covered by this report, against an increase of 3 for the preceding year. The nativity and sex of the inmates is given as follows:

Caucasians, 267; Indians, 13; negroes, 12; Chinese 1; total, 294. There is but one woman confined in the prison. The total number of prisoners received during the year by regular commitment was 115. The various counties sending prisoners during the year were: Cocino, 12; Cochise, 7; Graham, 27; Gila, 6; Maricopa, 16; Mohave, 3; Navajo, 6; Pima, 9; Pinal, 3; Santa Cruz, 1; Yavapai, 13; Yuma, 6; United States prisoners, 6; total, 115.

The prisoners released during the year numbered 107, of which 89 served full sentences, 4 were pardoned, 9 paroled, 3 died, 1 released by order of the supreme court, 1 on commutation of sentence. One United States prisoner was pardoned by the President, and the sentence of one commuted.

The gross cost of maintenance of the prison for the year was \$50,647.43, from which should be deducted the earnings, amounting to \$4,941.15, leaving the net cost \$45,706.28. The net per capita cost for the year was \$165.411. The gross expense is \$4,822.10 less than the previous year, which is partly explained by the difference in the contract price of beef for the two years—being \$1.23 less per hundred-weight during the last year. The quantity of wood purchased during the past year was \$520.13 less than the preceding year, and there is a difference in the quantity of prison stripes purchased, the total being \$627.01 less than the year preceding.

The lands of the prison farm were available this year to some extent, owing to the absence of freshets and the consequent overflow of the cultivated areas. Computed at market rates, the products raised amounted to \$117.70.

A great many improvements have been made at the prison during the year, including the extension of the prison wall, the construction of heavier gates, the construction of guard stands over the gateway and on the southwestern corner of the wall. Excavation work in the new yard is progressing nicely. A 7½-horsepower motor to operate the blower used to force air into the cells has been installed. A 60-gallon coffee boiler was also installed in the prison kitchen at a cost of \$135. Frequently during the year the outer and inner surfaces of the prison walls have been replastered and the buildings repainted or whitewashed as required. The increased population of the prison necessitated the purchase of 5 steel-cell cages, which have been ordered by the board of control. A new cage building has been constructed west of the main cell house to receive these new cages.

Wood is used as fuel, it being purchased from the Indians at a cost of \$3.10 per cord for mesquite, and \$2.60 a cord for cottonwood and willow. During the year there were consumed 1,180½ cords, being about 40 cords less than the preceding year.

A certain amount of work is required of every able-bodied prisoner, the most of them assisting in the repair work under way. The manufacture of adobe bricks for use at the prison in construction work and for sale is carried on extensively.

The discipline has been excellent, only one attempt to escape being reported. There was a murder committed inside the prison during the year, Simon Alderete having been stabbed to death by Francisco Garcia, the latter having later been convicted and the death penalty passed. The superintendent of the prison gives the following account of the attempted outbreak:

On the morning of April 28 of the present fiscal year a daring attempt to escape was made by several convicts, headed by William Laustannau, No. 2029.

While making my usual morning rounds in company with the assistant superintendent, Mr. Wilder, we were seized by several convicts near the yard office in front of the garden, who attempted to overpower us. The guard on the wall near that point, who was armed with a short-barrelled shotgun loaded with buckshot, fired into the rioters at my command, unavoidably wounding Mr. Wilder in the leg, as well as slightly wounding a few of the convicts participating in the riot. The men then rushed us into the yard office to seek protection from the shots, but in the meantime, Cook W. T. Buck, No. 1644, who was standing near by, came to my assistance at my order. He was armed with a carving knife, and used it so ably that I was able to break away from my assailants. In the meantime, Mr. Wilder, who was resisting against overpowering odds, was stabbed near the heart and rendered senseless for a few minutes by a blow over the head with a large file held by one of the convicts.

The action of Convict Buck in attacking them with a knife confused the men so that the riot was practically quelled then, though not before four of the ringleaders attempted to follow out their original plan of escape by using the body of the assistant superintendent as a shield. They got as far as the gate with Mr. Wilder, who had partially recovered from the shock of the blow, but further progress was barred by the appearance on the walls of several armed guards.

During the *mélée* four of the rioters were wounded by shots fired by the guard and by knife thrusts from Cook Buck, who, in addition to receiving a buckshot in the leg, was stabbed twice by the rioters, though fortunately not as serious as was at first feared.

The wounded convicts were taken to the hospital for treatment, and none of the wounds being very dangerous they were removed to dark cells for safe-keeping, and are still being held in solitary confinement pending the action of the grand jury.

There have been no escapes during the past year, owing to the vigilance of the officials of the prison and the guards.

The prison library is increasing each year, many additions having been made during the past fiscal year. There are now about 1,100 bound volumes. The library is well patronized by the inmates, they being allowed to take books from the library to their cells. All of the leading magazines and periodicals are kept on the library tables. Newspapers are not allowed to reach the hands of the convicts.

The prison school, which has been in operation for the past three years, has done a great deal of good. Many prisoners have learned to read and write by this means. The school is under the charge of a convict and attendance is not compulsory. Grammar, history, geography, arithmetic, and Spanish are taught.

The guards employed at the prison come from different sections of the Territory and are selected after rigid examination as to marksmanship and general character. The present force is probably the best the prison has ever had.

## ASYLUM FOR THE INSANE.

The Territorial asylum for the insane is located near Phoenix, surrounded by trees and shrubbery. Substantial improvements have been made during the past year, and preparations are now underway for the construction of additional buildings.

At the close of the fiscal year there were domiciled in the asylum 226 persons, of whom 38 were females and 188 males. During the year there were received by commitment 121 patients, 25 of whom were females and 96 males. Treatment was given to 350 patients, 37 of whom were discharged as cured, 17 paroled, 34 died, and 7 escaped.

Of the 121 patients received at the asylum during the year 42 were committed from Maricopa County, 22 from Cochise, 15 from Pima, 11 from Yavapai, 6 from Graham, 5 each from Pinal, Coconino, and Mohave, 2 from Santa Cruz, 2 from Gila, 4 from Yuma, 1 from Apache, and 1 from Navajo. The causes assigned for the condition of the patients are many, alcoholism being responsible for 25 of the number. There are 5 male patients of the number received during the year over 70 years of age, 5 between 60 and 70, 15 between 50 and 60, 26 between 40 and 50, 25 between 30 and 40, and 19 between 16 and 30. Of the female patients 1 is past 70 years, 3 between 50 and 60, 5 between 40 and 50, 9 between 30 and 40, and 7 between 16 and 30.

The recovery rate for the year is 10.57 per cent of the number treated. The rate computed on the number admitted is 30 per cent. Patients are given thorough treatment from the time they enter the asylum, and each case is given careful attention at all times.

The cost of maintenance of this institution during the past fiscal year was \$37,413.90, the sum of \$7,022.86 represented in cash receipts and consumed from products having been deducted to give this net expense of \$37,413.90. The net per capita cost of an average of 237.4 patients was \$157.80, the net daily per capita cost being 43 cents.

The asylum is in excellent condition, but will be better able to accommodate the patients when additional buildings are erected, work upon which will soon be underway.

## TERRITORIAL INDUSTRIAL SCHOOL.

The industrial school was formally opened December 1, 1903, appropriate exercises being held on the opening day, participated in by many leading citizens of the southern part of the Territory. The board of trustees, consisting of Mr. Ben Heney, Mr. H. Buehman, and Mr. A. H. Emanuel, has had a great deal to contend with in starting this school, but they have worked earnestly and placed the school on a solid basis for successful operation. Mr. F. R. O'Brien, of Cochise County, was selected superintendent, and from his report I have taken much of the information presented in this description.

At the close of the fiscal year there were 32 boys confined in the school. It would hardly be proper to say that they are confined, as their liberties cover a scope of many acres, and they are in no sense "herded." A careful watch is kept over them and attempts to escape are seldom made. The school was scarcely completed at the time of the opening, and many improvements and additions have been made during the year as the needs were felt.

While the cost of maintenance is very great at this time, consider-



ation must be given to the fact that the greatest expense always comes with the opening of an institution of this kind and placing it in successful operation. The 32 boys confined there now would be occupying cells in county jails throughout the Territory, associated with hardened criminals, with all the influences of their surroundings tending to develop the criminal tendencies. Under the new conditions of confinement the boys are taught to work, their minds are diverted from misdeeds, their characters are developed in order that the best in them may be brought out, and when they leave the institution they are equipped mentally and physically to become good citizens of the Territory. As I have said before, the Territory and society is the gainer if but one boy is saved by this school.

Infants between the ages of 8 and 16 years are admitted to this institution for terms not less than one year nor more than five years when convicted of crimes that would be punishable by imprisonment in a county jail or the Territorial prison. Of the 32 boys in the school 14 were committed for crimes and would have been sent to jail and placed in close confinement were this institution not in existence. The remaining 18 were committed at the instigation of parents or guardians upon proof of the incorrigible character of the youths, 8 of this number having committed petty crimes that would have placed them in the custody of county sheriffs.

Careful attention is given to each individual inmate, and the boy is given to understand that whatever he has been charged with is not to be taken into consideration by the officers in the treatment of him, that he shall be given every opportunity to make amends for his misdeeds, and upon himself depends whether he will receive the full benefit of the training at the institution. The officers give him every assistance and a feeling of confidence is inspired, all phases of penal servitude being eliminated as much as possible. He is taught to consider the institution a school where he will learn a trade and be fitted for active work when he has served his sentence.

Military discipline is maintained, this being the main feature in carrying out the training of the youths. Two companies have been formed, one composed of the larger boys and the other of the smaller ones. These companies are under command of a captain, detailed from among the employees. Cadet officers are also appointed, thus giving responsibility to the boys and adding to the interest in drill and training along military lines. Military discipline is maintained from the time the boys awake in the morning until they retire, and whether awake or asleep the boys are under the surveillance of officers of the institution. The larger boys are separated from the smaller ones, owing to any bad influence they may have over them.

The course of study is that required by the Territorial school law in so far as possible to adopt. The smaller boys attend school in the morning from 9 to 11.45 o'clock, and the larger boys attend from 1 to 4 p. m. In the evening, under the charge of an instructor, the boys study for one hour, preparing their lessons for the next day. The boys are required to write to their parents or guardians every two weeks.

Considerable progress has been made by the inmates along industrial lines. They are instructed in carpenter work, painting, farming, shoe repairing, housework, etc. They wash and iron all the clothing

used by them; and in the kitchen the boys are detailed to assist, and special instruction is given them. The boys also assist the gardener and receive instruction in gardening and farming, the products raised being used at the school. Owing to lack of water but little farming is done. They are trained in housekeeping and serving in the dining-room at meal hours.

The daily routine of industry, study, and play shows that the inmates have no idle moments when they are not under the strictest surveillance. At 5.30 a. m. the boys arise, make their beds, and the night watchman turns them over to the captain at 6 o'clock. Assuming command the captain marches them downstairs to the toilet rooms. Until 6.30 the regular "setting-up exercises" are gone through with, the flag is raised and saluted, and the lines are again formed for the march to the dining hall for breakfast. At 7 a. m. the boys march to the detail grounds where each officer assumes his respective detail, the duties of which, for the smaller boys, require until 8.30 a. m., after which the boys prepare themselves for school work, which lasts from 9 a. m. to 11.45, the larger boys continuing at work until 11.30, when they report at the detail grounds and prepare for dinner. From twenty to thirty minutes are allowed for meals. After dinner the boys go to the playgrounds to romp until 12.50, when the larger boys prepare for school and the smaller ones are detailed by the officers to various work. At 4 p. m. the recall is sounded and the companies are formed, those requiring the attention of the doctor being marched to the dispensary, where they are examined and treated. From 4 to 5 o'clock the boys enjoy recreation on the playgrounds, entering heartily into the various forms of sport. Drill occupies their attention from 5 to 5.30, and at 6 o'clock supper is served. After supper they go to the school rooms, where they remain until 7.45, retiring at 8 p. m.

On Saturday and Sunday the daily routine is changed somewhat. Saturdays there are no school sessions, but the smaller boys work until 10 a. m., after which they bathe, repair their clothing, etc., which occupies them until dinner time. The larger boys continue work as on other days. In the afternoon all the boys work until 2 p. m., when the larger boys give their attention to bathing and repairing clothing until 3.30 p. m. From this time they enjoy recreation until 5 o'clock, from which hour the routine of other days is carried out. The boys bathe in a large cemented tank, half filled with water, a shower being connected with the plunge.

On Sundays no school sessions are held. The boys go through the routine of other days until 10 o'clock in the morning, when they attend church services, which are held in the town of Benson. The afternoon is largely given over to play.

Different forms of punishment are employed, such as marking time, extra work, and carrying the log, all of which is required to be done during the time allotted for play. Corporal punishment is not allowed and is only exercised by the superintendent or in his presence. The boys are treated kindly but with firmness, and strict obedience to the rules is required at all times.

Owing to the fact that the industrial school is a comparatively new institution the management and the conditions existing are gone into more fully than the older institutions receive. The industrial school is largely an experiment in this Territory, although its needs have been felt for years. How to conduct it with the greatest benefit to



the inmates is yet a problem, although I am glad to state that the institution is to-day in excellent condition and the success is most marked considering the short period of operation.

#### PUBLIC BUILDINGS.

The public buildings in Arizona show how stable the foundation of this new Commonwealth has been laid. The capitol is a credit to a progressive people, its appointments in many ways comparing favorably with many of the State buildings. The capitol is located at Phoenix, the capital city of the Territory, and occupies 10 acres of land which is laid out in trees of semitropical character, the capitol commanding a position in the center of the grounds. This building was constructed at a cost of \$130,000, the final appropriation calling for the expenditure of \$250,000.

The building is 184 by 84 feet, and four stories in height. Accommodations are provided in the building for the various Territorial officials, the legislature, and the surveyor-general. The grounds are well cared for, and contain numbers of deciduous trees, palms, roses, shrubs, and cactuses.

The rotunda of the capitol is 44 feet in diameter and extends from the ground floor through all the stories of the building to a height of 78 feet, being surmounted by a dome, which is crowned by a statue of Liberty 16 feet in height. The dimensions of the halls provided for the legislative bodies are 38 by 36 feet, and special attention has been given to the acoustic properties of these halls and to their ventilation. The gallery space in each hall has a seating capacity of between 200 and 300, and in the surrounding halls are the committee and other rooms required for the accommodation of the assembly. Spacious offices are also provided for the governor and other Territorial officers.

The Territorial prison is located at Yuma. Improvements have been made during the year in the buildings by the addition of necessary structures. The prison is in excellent condition and the inmates are given work throughout the year. Visitors from the States declare that the Arizona penitentiary is one of the best they have ever seen, the cleanliness and discipline being most noticeable.

The Territorial prison buildings are inclosed with a wall, the front and rear lengths of which are 290 feet, the sides being 321 feet long. This does not include the woman's department at the southwest corner, which is about 30 by 30 feet. The walls are 20 feet high, 8 feet thick at the bottom and 5 feet at the top, surmounted by a cement cap and coping. Inside of the walls is a cell house, 134 feet long by 65 feet wide, built of rock and iron. A building of adobe, 167 feet long by 34 feet in width, contains the engine room, boiler room, tailor and shoe shops, laundry and bath house, and library; and the kitchen and dining-room building is also of adobe, 110 by 21 feet. The dining room is 75 feet long and 18 feet wide inside. Outside the walls are the office of the superintendent, the same building (one story in height and 38 by 38 feet in size) being also used as a storehouse, and a 2-story building for the sleeping accommodations of the guards.

The University of Arizona is located at Tucson. During the past year additional buildings have been erected, including a \$26,000 library and museum, and a new gymnasium which cost about \$7,000. A new stamp mill has been erected also during the year on the grounds.



The university is situated upon high ground about a mile from the business center of the city, with which it is connected by a street-car line. On every side it commands a view of mountain scenery of remarkable extent and grandeur. The location can not be surpassed for healthfulness. The water supply for the university is drawn from a well on the premises 100 feet deep and is of unusually good quality.

The main building—University Hall—is 200 by 105 feet, two stories in height, and completely surrounded by a wide two-story veranda. The building contains the offices, recitation rooms, laboratories, and apparatus rooms of the various departments, an assembly room, the libraries of the university and experiment station, and the Territorial museum. Adjoining the main building is the mining annex, 80 by 60 feet, equipped with metallurgical machinery.

North Hall, a dormitory two stories in height, built of gray stone of fine quality, originally provided as a home for male students, is for the use of young women. It contains 16 rooms, each large enough to accommodate two students, a reception room, and a room used for women students in physical culture.

South Hall, a fine brick dormitory containing 40 rooms, with bath and toilet rooms, is for the use of male students and instructors.

A new dining hall with kitchen, 40 by 104 feet in size, provides ample room for all dormitory students.

Three brick houses, two stories in height, are occupied as homes by the president and instructors.

A substantial brick building contains a suite of rooms for the use of the commercial assaying department, the rooms being furnished with a large melting furnace, with necessary muffle furnaces and other accessories.

Joined in continuous structure with the assaying building are the shops of the mechanic-arts department, occupying an area of 80 by 95 feet, containing a room for mechanical and free-hand drawing and the machinery and appliances for the working of wood and iron.

Other buildings are the boiler house, which also contains the well and pumps whereby the water supply for irrigation and general purposes is obtained, a greenhouse 80 by 21 feet, a propagating house, the cottage occupied by the classes in domestic science, and a temporary wooden building used for various purposes.

The insane asylum consists of a main central building of brick, two wings of two stories, and basements. The main building is 100 feet long and 50 feet wide. A hall of 12 feet in width runs the entire length of the building. On each side of the central structure there is a wing 100 feet long and 40 feet in width, separated from the main building by a vestibule 16 feet wide. The outbuildings consist of a general dining room, 100 feet by 40 feet, with two wings each 16 by 20 feet. A building containing the engines, boilers, dynamos, and pumping plant, and the stables, carpenter shop, blacksmith and paint shops comprise the other buildings of importance. The ornamental grounds in front of the asylum contain 4 acres, tastefully stocked with trees, semitropical flowers, plants, and palms. The asylum is situated 2 miles east of the business section of Phoenix.

The normal school building at Tempe is a commodious structure, 136 feet long, 80 feet wide, and three stories high. The lower story is of brown sandstone, and the other two of pressed brick with sandstone trimmings. This edifice is beautiful in architectural design, convenient

in arrangement, and substantial in construction. All things considered, the building is excellently equipped for the purposes of normal school work. During the year the construction of a dormitory was completed.

The Northern Arizona Normal School is located at Flagstaff, in Coconino County, and is an important addition to the educational system of the Territory. The building is of stone, commodious, and convenient in its appointments. It is the finest public building in Arizona so far constructed except the capitol. The improvements made during the year will be found under the subject of education in the report of the president of the normal.

The Territorial Industrial School, at Benson, is contained in a single structure of considerable extent in its capacity to satisfy the present needs. It is one of the finest buildings in the Territory. The building is 120 feet in length and over 54 feet in depth, two stories in height. There is a basement 50 by 35 feet under each of the two wings of the building. White tufa stone is used throughout the building, and the inside facing is of brick. Substantial improvements have been made during the past year. The building was occupied in December, 1903, when the school was opened, and since that time it has been in constant operation.

The main building of the industrial school is a two-story structure of tufa stone. It contains the quarters for the superintendent, officers, and boys. On the first floor are the offices of the trustees and superintendent, superintendent's kitchen and dining room, the commissary's and clerk's office, reception room for visitors and parents of the boys, one schoolroom, dispensary and hospital, boys' kitchen and dining room. The upper floor has the superintendent's and officers' sleeping apartments, with toilet and bath for each apartment, one large dormitory containing 29 single beds, one small dormitory containing 9 single beds, one schoolroom, seating capacity for 21, single desks used. There are two basements under either wing of the building, one is being used for the commissary department and detention room, and the other for a play room, if needed in wet weather.

It has been necessary to remodel the main building to meet the needs of the institution; it was found necessary to remove the partition, where there were two small dormitories and make one large one, thereby adding to the healthfulness of the boys and avoiding the expense of an extra night watchman.

The main building is lighted with acetylene gas, the plant being of 50-light capacity. The machine is located about 150 feet from the main building. Twenty-five lights are used from dark until 8 p. m., and an average of 10 lights from then until daylight. The plant gives fairly good satisfaction.

In addition to the main building there are the following outside buildings: Wash room, closet, gas house, barn, wagon shed, tool house for gardener, and carpenter and paint shop. All of these buildings are erected of lumber and built since last October. In the wash room is a place where the boys have their lockers in which they keep all their belongings. This room is also used for laundry work and shoe repairing.

The 40 acres belonging to the school is fenced in by a picket fence 4 feet high near the main building for 600 feet on one side and 300 feet on the other, and the balance of the land is inclosed with a fence 4 feet high of three barbed wires and a rail. The picket portion of



the fence is painted and the one rail and posts are whitewashed. The work of erecting, painting, and whitewashing the fence was done by the boys under the supervision of an officer.

The water used at the school is furnished by two artesian wells. At the opening of the institution there was only one well, bored to a supposed depth of 1,075 feet, the flow from which was about half a gallon a minute. This was inadequate for the domestic needs of the institution and another well was bored to a depth of 883 feet which gave a little over eight gallons per minute. Even with the two wells the supply is limited. The water flows from the wells into a cistern 12 feet deep and 9 feet in diameter. From this it is pumped by a windmill into two tanks of 5,000 gallons capacity each and from the tanks it is distributed through pipes to the buildings and grounds.

#### POINTS OF GENERAL INTEREST.

The Grand Canyon of the Colorado in northern Arizona is the most interesting point in the Territory. During the past year the hotel accommodations have been improved and thousands of visitors have taken advantage of the railway which has shortened the journey and rid it of its discomforts. The large number of descriptive pamphlets issued by the railway companies have made the traveling public familiar with the facilities for handling the tourists and housing them at the canyon; and descriptions of the great gorge are easily attainable throughout the country. That this is the greatest wonder in the United States travelers all agree, and I am glad to report that the travel to the canyon has greatly increased during the year.

Another point of more than ordinary interest is the Natural Bridge, accessible by trail and wagon road.

This bridge spans Pine Creek, one of the tributaries of the upper Verde River, in Gila County, in the extreme northwest corner of Tonto Basin, and about 4 miles from the town of Pine. This remarkable natural formation of rock, spanning a deep chasm and forming a perfect bridge, is one of the wonders of the world and far exceeds the Natural Bridge of Virginia in extent and grandeur. The span of this bridge is 80 feet, and the width up and down the creek is 150 yards. The arch is perfect in form, and great limestone walls on either side curve to meet and sustain the arch, presenting a scene of great attractiveness and wonder. The stream which runs beneath the bridge and winds among the bowlders forms pools of unknown depths.

There are numerous caves, many of which have been explored, and little streams of water run through the crevices of the rocks and trickle from the roofs of the caves. Any article, whether of wood or soft substance, becomes petrified if placed in a position where the dripping water will saturate it. There is a hole in the bridge through which one can look down to the creek below, 126 feet.

Probably one of the most interesting curiosities in the Territory is the large petrified forest in Navajo County, which extends over many miles. Great trees, petrified to solid rock, and limbs and branches are found throughout the area covered by the forest. The texture of the dead trees is distinctly shown, and beautiful specimens from this forest are found on every hand. Fossils of animals of extinct species are found among the trunks of trees. Monarchs of a once mighty forest are here strewn about for miles, and every fiber preserved in shapely



forms of stone. This remarkable scene is but a few miles northeast from Holbrook, on the Atlantic and Pacific Railroad, and is visited by many tourists during the year.

The cliff dwellings in Yavapai and Coconino counties, Montezuma's well and castle in Yavapai County, the ice caves of the San Francisco Mountains, numerous hot springs in different parts of the Territory, and the ancient ruins of prehistoric interest are interesting to the tourist who travels in this Territory.

Arizona contains a number of excellent hot springs and other points of great interest. Hot Springs, in Yavapai County, is a resort which attracts hundreds of visitors every year, the water there being exceptionally good for the relief of persons suffering with rheumatism. Large and commodious hotels, beautiful grounds, and fine drives are provided for the accommodation of tourists.

Indian Hot Springs are located in Graham County and are recognized for their health-giving waters. They are reached by way of Fort Thomas, on the Gila Valley, Globe and Northern Railway.

Agua Caliente is in Maricopa County and is a resort visited by invalids from all parts of the Southwest. Accommodations are provided for visitors.

Hookers Hot Springs are located in Cochise County, near the Sierra Bonita ranch.

Near Tucson, in the Rincon Mountains, are hot springs of value.

Oracle is a mountain place in the Catalinas, situated among the pines, and is popular in summer time, owing to the cool climate which prevails.

Iron Springs, situated near Prescott, in the Bradshaw Mountains, is a popular summer resort easily accessible from Phoenix. Hundreds of Phoenix people spend their summers there.

The mission of San Xavier del Bac, first established in 1687—the present edifice having been built about one hundred years later—is an attraction which all travelers in southern Arizona visit. It is located 9 miles south of Tucson. The ruins of the San Augustine mission are interesting also, this crumbling edifice being within a mile of Tucson. It was built in 1762.

The famous Casa Grande ruins in Pinal County are of great historical interest and are visited by many travelers.

Montezuma's castle and well in Yavapai County are reached by an overland journey, and a visit to them is well worth the inconveniences of this manner of travel to one interested in prehistoric matters.

The mountains of Arizona provide natural scenery unsurpassed in any mountain region.

There are many streams where fishing attracts people from the valleys and plains during the summer months, and beautiful natural parks are found in the mountains, where escape from the heat of the valleys is provided. The altitude of the principal mountain ranges above sea level is as follows:

	Feet.
San Francisco Peak.....	12,561
Sierra Blanca.....	11,496
Mount Graham.....	10,516
Old Baldy (Santa Rita Mountains).....	10,315
Santa Catalinas.....	9,950
Mount Kendrick.....	9,800
Mount Turnbull.....	9,500

	Feet.
Mount Sitgreaves.....	9,087
Bill Williams .....	9,080
Chiricahua .....	9,000
Mount Union (Sierra Prieta).....	9,000
Four Peaks (Mazatzal Range).....	8,600
Wallapai Mountain.....	8,000
Superstition Mountain.....	8,000
Baboquivari .....	7,000

## HUNTING AND FISHING.

The open game season in Arizona for the years 1904 and 1905 is as follows: Quail, bobwhite, partridge, pheasant, snipe, rail, grouse, October 15 to March 1; ducks, geese, brant, doves, open all the year; trout, not less than 6 inches long, June 1 to September 1; black bass, strawberry bass, crappie, September 1 to December 1. The limit is 3 male deer in one season; 25 ducks and 25 quail in one day; fishing with hook and line only permitted; sale of game prohibited.

At the solicitation of the sportsmen of the Territory, the legislature of 1903 made some changes in the game laws, making the deer season earlier in the fall and two weeks longer, and making the season for killing ducks, geese, and brant open all the year. It was formerly the same as the quail season. Ducks do not breed in the Territory, are never here late in the spring, but are sometimes found in great numbers late in the summer or early in the fall, before the season opened under the old law.

The killing of antelope has been prohibited since 1901, and the small, scattered bands then in the Territory are reported to have multiplied rapidly. Very few have been killed except by the Indians, and prosecutions have been made for violations of the antelope law wherever found. The several varieties of deer in the Territory are becoming more numerous, and they may be easily found in any of the mountainous sections.

Quail are abundant all over Arizona, and it is not difficult to kill the "limit" any day of the open season. Doves in the winter and white-winged pigeons in the summer are more numerous than any other game birds we have, and are hunted extensively. The building of the Tonto reservoir and other irrigation works for storing water will bring large numbers of waterfowl here to winter, and it is believed will make Arizona one of the best shooting grounds for ducks and geese in the country.

In the mountain regions bear and mountain lions are still quite plentiful. The boards of supervisors of the different counties offer liberal rewards for scalps of wild animals (\$20 for lion, \$10 for bear, and \$1 for wild cat or coyote), which results in several hundred being killed each year.

Several of the mountain streams abound in trout and bass. Black bass, crappie, and catfish have been placed in the rivers of central Arizona, and are doing well. Carp, suckers, and other fish peculiar to this section are very plentiful.

The elk rightly takes the lead among the game animals of Arizona, although the number left is very small.

Of the deer family there are six different kinds in Arizona, namely: The blacktail, whitetail, fantail, mule deer, burro deer, and Papago

or spotted deer. The blacktail, the first to feel the exterminating force of the hunter, is still with us, ranging from the northern portion as far south as the high mesas. Of late years, however, they are not often found below the pines.

The mule deer, first cousin to the blacktail, is somewhat more shy and its habitat is less exposed to the hunter. The blacktail still roams over a large portion of the middle and southern counties of the Territory, ranging in the lower country and sometimes found well out on the flat country, mixing with the burro deer.

The burro deer, a small, compact, gray animal, which retains its color of ash gray all the year around, is distinctly separated from other species of the deer family. The burro deer takes on its fat in the spring and summer months.

The whitetail and fantail are so near kin that the casual observer can see no difference, yet one exists, and he who studies can discover it. The habitat of these animals is in all parts of Arizona, high and low, among the pine, the oak, the juniper, and the mesquite.

The papago or mottled deer are very rare and hard to find. The existence of this animal has been questioned by many hunters, but live specimens can yet be found. The habitat of this deer is the dry and almost inaccessible plains of southern Arizona. The papago or mottled deer is the smallest of the deer family.

The antelope or pronghorned is still to be found in portions of the Territory, but are fast disappearing.

The mountain sheep or big horn have been driven to the most isolated regions of the desert, and in a few years more they will have disappeared and become extinct.

Of the bear family there are five species—three known to hunters as “tree climbers,” and two species known as the “long claws” or “ground fighters.” Of the tree climbers the large brown bear is the most destructive to cattle, and is to be found in all portions of the Territory. The cinnamon bear is smaller, longer, and leaner than the brown bear, and harder to find.

The small black bear is plentiful in some portions of the country and the only species of the bear family good for man to eat. Of the long claws, the grizzly and silver tip are one and the same. They are to be found high up in the mountains in the summer, and during the fall months they come down to oak, juniper, and grapes. The little gray bear, whose average weight is about 400 pounds, belongs to a class by himself and is the most vicious animal, with one exception, we have in Arizona. He will spring and fight and is hard to kill.

Of the large cat family there are three kinds: The jaguar or American tiger, rarely found far away from the southern border; cougar or mountain lion, found all over the Territory, and the puma, a smaller animal than the cougar, rarely exceeding 6 feet in length from tip to tip, but very smooth of build and quick in action, and a great lover of chickens and other domestic fowls.

There are also three kinds of the bob or wild cat. The wolf family consists of the lobo, a large animal with a tawny and brown color, and when running in bands they are very destructive to range stock. The gray or mountain wolf is seldom found below the pine belts of the high mountains. The keiliola or prairie wolf, in partnership with the bussarel, are the most valuable scavengers and range over the entire



country. The red fox, crop (or silver-gray) fox, the small gray fox, the civet cat, the raccoon, pine squirrel, gray squirrel, and the rock squirrel are all found in Arizona.

The beaver is still found in portions of the Territory. The wild turkey, quail, and ringneck pigeon are also found here.

#### NEWSPAPERS.

Almost every place of any importance in the Territory is supplied with news by a local newspaper. There are 53 newspapers in the various towns of the Territory this year, two having been established since my last report. The greater number of the newspapers are Democratic in politics, but all of them devote their space mainly to giving the local news and showing the progress made in the different industries of their sections and the Territory at large. As a rule the newspapers receive generous patronage, and the wages paid the printers are controlled mainly by the local trade unions, and are considered fairly good.

The newspapers published in the Territory at the present time are as follows:

*Apache County.*—Snips and St. Johns Herald, St. Johns, weekly; Apachito, a Spanish weekly, St. Johns.

*Cochise County.*—Prospector, Tombstone, daily and weekly; Miner, Bisbee, daily; Review, Bisbee, daily; Dispatch, Douglas, daily; International-American, Douglas, daily; Press, Benson, weekly; Range News, Willcox, weekly.

*Cocconino County.*—Sun, Flagstaff, weekly; Gem, Flagstaff, weekly; News, Williams.

*Gila County.*—Silver Belt, Globe, weekly.

*Graham County.*—Guardian, Safford, weekly; Era, Clifton, weekly; El Obrero, Clifton, weekly; Standard, Morenci, weekly.

*Maricopa County.*—Arizona and New Mexico Workman, Phoenix, weekly; Enterprise, Phoenix, daily; Gazette, Phoenix, daily; Republican, Phoenix, daily and weekly; Review, Phoenix, weekly; News, Tempe, daily and weekly; Free Press, Mesa, daily; Cattleman, Phoenix, weekly; Southwestern Stockman, Phoenix, weekly; News-Herald, Martinez, weekly; Miner, Wickenburg, weekly; El Mensajero, Phoenix, weekly.

*Mohave County.*—Arrow, Chloride, weekly; Miner, Kingman, weekly; Mineral Wealth, Kingman, weekly.

*Navajo County.*—Argus, Holbrook, weekly; Mail, Winslow, weekly.

*Pinal County.*—Blade, Florence, weekly.

*Pima County.*—Post, Tucson, weekly; Star, Tucson, daily and weekly; Citizen, Tucson, daily and weekly; Alianza, Tucson, weekly; El Fronterizo, Tucson, weekly; Cattleman and Miner, Tucson, weekly.

*Santa Cruz County.*—Oasis, Nogales, weekly; Times, Nogales, daily; Vidette, Nogales, weekly.

*Yavapai County.*—Arizona Journal-Miner, Prescott, weekly; Courier, Prescott, daily and weekly; Herald, Prescott, daily; News, Jerome, weekly; Reporter, Jerome, weekly.

*Yuma County.*—Sentinel, Yuma, weekly; Sun, Yuma, weekly.

At the United States Indian school near Phoenix the Native American is published monthly by the pupils, and at the University of Arizona during the school period a monthly publication is printed under the direction of the students. The Tempe Normal School also published a monthly during the term.

#### BOARD OF LOAN COMMISSIONERS.

Considerable county and Territorial indebtedness was funded by the loan commission during the year. The application of the city of Tucson for the funding of \$12,000 of bonds of that city was favorably

acted upon at a meeting held September 1, 1903. The Tucson bonds bore interest at the rate of 7 per cent per annum, and the city was unable to pay the principal and interest when it came due. Territorial 5 per cent 50-year bonds were issued in redemption of this indebtedness.

The last bond in the Yavapai County P. & A. C. Railroad bond series, amounting to \$1,000 and accrued interest, was funded by the commission September 1. A typewritten bond of \$275.29 was issued in the final settlement of the Pima County narrow gauge railway case, and on September 1 the commission made its final return to the supreme court in the matter.

On January 2, 1904, the commission received an application from Maricopa County for the refunding of \$15,000 of county indebtedness bearing interest at 7 per cent per annum. Favorable action was taken on this application, Territorial 5 per cent bonds being issued.

Application was made by the holders of 30 Santa Cruz County 7 per cent coupon bonds, issued by that county to Pima County in the adjustment of indebtedness on the creation of the new county of Santa Cruz from Pima County, the said bonds having been indorsed by Pima County payable to the applicant. With accrued interest the amount due was \$31,125.83, the commission issuing 31 bonds of \$1,000 denomination each and Santa Cruz County paying the balance of \$125.83 in cash on the day the exchange was made.

A great number of meetings were held during the year for the consideration of matters upon which no favorable action was taken.

#### ARIZONA AT THE WORLD'S FAIR.

The legislature of Arizona authorized the issuance of \$30,000 of Territorial bonds for the purpose of presenting at the Louisiana Purchase Exposition a representative exhibition of Arizona's varied resources. These bonds were sold for \$32,100, a premium of 7 cents on the dollar.

This sum gave the board of managers for Arizona ample equipment for carrying out the desire of the people of the Territory. The exhibit at St. Louis is not only a credit to Arizona but to the great mining, stock-raising, and agricultural section of the United States.

A modest Territorial building was erected on the World's Fair grounds, prominently located at the entrance upon the State plateau, at the head of the grand galaxy of State buildings. The building is in charge of a member of the Arizona board of managers, assisted by Miss Jennie Drais, of Prescott.

Arizona is represented in five different departments of the Fair, including the State building. The exhibits embrace a comprehensive display of Territorial products, carefully selected by the members of the board from the various counties of the Territory.

The mineral exhibit in the Palace of Mines and Metallurgy is in charge of Mr. Ernest E. Ford, a prominent metallurgist of Arizona. This exhibit is noted exceptionally for its completeness, the ores being characteristic of the many mineral-producing sections of the Territory. This exhibit, when the Exposition shall close, will be placed in the school of mines connected with the University of Arizona.

The educational exhibit is in charge of Miss Emma E. Ford, an experienced teacher, of Phoenix. It is located upon one of the main



aisles in the Educational Palace, adjoining the California exhibit. It consists of handwork, from the kindergartens to the academic branches, drawings, paintings, and other evidences of the advancement of Arizona children.

The agricultural exhibit in the Palace of Agriculture, in charge of N. C. Bernard, of Tucson, located upon the aisle next to the main aisle, is strictly a representative exhibit of all the products grown in the Territory from the different sections, and is receiving marked attention from the eastern farmer, whom it is difficult to convince that much of the products came from the second and third crop by irrigation.

The horticultural exhibit, in charge of Mr. Mont M. Mansfeld, of Tucson, is very favorably located at the east end of the Palace of Horticulture, across the end of the main center aisle, which gives it prominence and a conspicuous view from the entire length and breadth of the building. The exhibit is typically representative of Arizona's fruit products of all kinds from the different fruit-growing sections of the Territory, and is greatly admired and highly complimented by the eastern horticulturists.

At the Territorial building and at all of the exhibit booths such literature pertaining to the resources and description of the Territory as could be obtained is distributed to all seeking information regarding the Territory.

In collecting and mobilizing the exhibits the board is much indebted to the several railroads of the Territory for their assistance and cooperation, they having taken up the exhibits at the various points and delivered them to the points of mobilization, and also furnished transportation to members of the board and their assistants.

#### RECOMMENDATIONS.

1. That Arizona's claims to statehood be given due consideration, and that such aid as lies within the power of the Interior Department be extended to secure the passage of an enabling act for the admission of the Territory to statehood within the present Territorial limits.

2. That the influence of the Department be exerted, wherever consistent, in opposition to the passage of the bill now before the Senate of the United States making of the Territories of New Mexico and Arizona one State, to be known as Arizona, such a union of the two Territories being inimical to the best interests of both and opposed to the wishes of the people of Arizona, who prefer a Territorial form of Government to admission in the manner proposed.

3. That the Congress of the United States be requested to reimburse Pima County, Ariz., in the sum of \$318,275.29 by direct appropriation, as being repayment to said county for an injustice committed by Congress in passing an act which validated certain 150 bonds, with accrued interest, known as the "Pima County Narrow Gauge Railroad bonds," after the entire issue of said bonds had been declared by the Supreme Court of the United States to be invalid and void and for which Pima County had never received value.

4. That the Indian school facilities in Arizona be increased in order to more quickly prepare the younger generation to become self-supporting, and that measures be taken to more properly care for the graduates of these schools by finding for them proper employment, thus aiding in preventing their return to former modes of life.



5. That appropriate measures be taken looking to the rejuvenation of the depleted forest area in this Territory, and that a system of tree and tree-seed planting be inaugurated by the Division of Forestry in order that the watersheds of the various streams in the Territory may be kept unimpaired as sources of water supply.

6. That further and extensive systems of water storage and systems of power under the provisions of the reclamation act be inaugurated in Arizona until all flood and subsurface waters are made available for purposes of irrigation.

7. That appropriate measures be taken by the Department looking to the development of the irrigation resources of the various Indian reservations within the limits of the Territory, in order that the members of the various tribes resident thereon may ultimately be greatly benefited by such development and be made absolutely self-sustaining.

8. That appropriations be made for the purchase of sites and the erection of public buildings in cities in this Territory where the same can be shown to be of ultimate benefit to the General Government.

9. That the appropriation for the contingent expenses of the governor's office be increased sufficiently to provide additional clerical force when needed from time to time for the expedition of the increased business of the office.

10. That the injustice of the Congress of the United States in failing to appropriate the amount allowed as the salary of the governor of the Territory of Arizona be called to its attention.

Very respectfully,

ALEXANDER O. BRODIE,  
*Governor of Arizona.*

Hon. E. A. HITCHCOCK,  
*Secretary of the Interior, Washington, D. C.*

## APPENDIX.

### TERRITORIAL AUDITOR.

*List of warrants drawn on the various funds from July 1, 1903, to June 30, 1904.*

Contingent expenses.....	\$725. 00
Territorial asylum for the insane.....	3, 571. 78
Territorial prison.....	4, 836. 38
Governor's contingencies .....	240. 90
Expense superintendent public health .....	188. 15
Live stock sanitary board .....	12, 244. 65
Territorial board of equalization.....	1, 316. 40
District judges .....	6, 000. 00
Salary:	
Territorial auditor.....	2, 350. 00
Territorial treasurer .....	2, 500. 01
Citizen member board of control.....	1, 800. 00
And expense attorney-general.....	1, 200. 00
Territorial librarian .....	50. 00
Assistant Territorial librarian .....	550. 00
Private secretary to the governor.....	1, 775. 00
Clerk board of control .....	810. 00
Adjutant-general .....	581. 65
Auditor's clerk.....	1, 500. 00
Assistant secretary of the Territory .....	1, 200. 00
Superintendent public health.....	983. 50
Corporation clerks.....	1, 825. 00
Deputy clerk supreme court.....	825. 00
Expense:	
Auditor's office.....	500. 00
Board of control office .....	250. 00
Board of control traveling.....	79. 70
Telephone rent.....	120. 00
Territorial museum.....	100. 00
Relief Mrs. Aceana Tafolla.....	300. 00
Subscription Territorial library.....	14. 00
Subscription Territorial library.....	75. 00
Necessary expense National Guard, Arizona .....	2, 295. 00
Expense adjutant-general .....	127. 30
Actual service expense National Guard, Arizona .....	6, 442. 50
Inspection account National Guard, Arizona .....	102. 85
Public printing .....	1, 169. 31
Arizona Rangers .....	11, 113. 23
Expense loan commission of Arizona .....	475. 13
Furniture and fixtures Territorial offices.....	645. 75
Expense Territorial library .....	3, 610. 79
Education deaf, dumb, and blind .....	1, 500. 00
Insurance Territorial library .....	420. 00
Equipping and furnishing gymnasium and library university.....	2, 072. 58
Expense National Guard, Arizona.....	50. 00
General fund .....	78, 536. 56
University fund .....	23, 177. 23
Territorial school fund .....	35, 406. 75

Normal school fund .....	\$29,373.51
Insane asylum fund .....	34,640.94
Territorial prison fund .....	45,374.74
License and inspection fund .....	15,045.27
Northern Arizona Normal School fund .....	18,942.15
Capitol building fund .....	6,099.29
Insane asylum improvement fund .....	3,699.12
Territorial prison improvement fund .....	4,025.68
Territorial industrial school fund .....	25,338.18
Tempe Normal School building fund .....	20,687.01
Ranger fund .....	21,749.16
Normal School of Arizona dormitory fund .....	290.87
<b>Total expense Territorial funds .....</b>	<b>362,386.46</b>

*Statement showing amount of outstanding warrants June 30, 1904.*

General fund warrants .....	\$3,147.07
University fund .....	13.85
Territorial school fund .....	8.35
Normal school fund .....	18.30
License and inspection fund .....	311.40
Capitol building fund .....	22.45
Industrial school fund .....	1,100.65
Ranger fund .....	1,180.00
<b>Total .....</b>	<b>5,802.07</b>

*Statement of general fund warrants outstanding June 30, 1904.*

Balance June 1, 1904, issue prior to 1900 .....	\$1,492.96
Balance June 1, 1904, issue of 1901 .....	12.00
Paid during June, 1904 (interest \$2.04) .....	12.00
Balance June 1, 1904, issue of 1902 .....	135.00
Balance June 1, 1904, issue of 1903 .....	1,400.01
Balance June 1, 1904, issue of 1904 .....	101.00
Issued during June .....	4,442.58
<b>Total .....</b>	<b>4,543.58</b>
<b>Paid during June .....</b>	<b>4,424.48</b>
<b>Balance outstanding June 30 .....</b>	<b>119.10</b>

## RECAPITULATION.

Balance June 30, 1904, issue prior to 1900 .....	1,492.96
Balance June 30, 1904, issue of 1902 .....	135.00
Balance June 30, 1904, issue of 1903 .....	1,400.01
Balance June 30, 1904, issue of 1904 .....	119.10
<b>Total .....</b>	<b>3,147.07</b>

*Bond account June 30, 1904.*

Page.	
370 Bond account .....	\$3,055,275.29
400 Funding bonds, account Territory:	
6 per cent .....	\$140,000.00
5 per cent .....	665,972.43
	<hr/>
	\$805,972.43
402	
to	
415 City and county funded debt .....	2,044,302.86
452 Insane asylum bonds .....	20,000.00
454 University of Arizona bonds .....	25,000.00
456 World's Fair bonds .....	30,000.00
457 Capitol building bonds .....	100,000.00
458 St. Louis World's Fair bonds .....	30,000.00
	<hr/>
	3,055,275.29



*Funded debt account June 30, 1904.*

Page.		
392	Funded debt account .....	\$2, 044, 302. 86
402	Apache County funded indebtedness .....	\$43, 473. 50
403	Coconino County funded indebtedness .....	159, 000. 99
404	Graham County funded indebtedness .....	147, 364. 70
405	Gila County funded indebtedness .....	44, 781. 36
406	Maricopa County funded indebtedness .....	281, 636. 43
407	Mohave County funded indebtedness .....	105, 363. 29
408	Pima County funded indebtedness .....	528, 515. 34
409	Pinal County funded indebtedness .....	136, 138. 08
410	Yavapai County funded indebtedness .....	338, 740. 07
411	Yuma County funded indebtedness .....	88, 791. 11
412	Prescott City funded indebtedness .....	91, 261. 90
413	Tucson City funded indebtedness .....	27, 423. 71
414	Tombstone City funded indebtedness .....	13, 812. 38
415	Navajo County funded indebtedness .....	38, 000. 00
		<hr/> 2, 044, 302. 86

*Statement showing amount of fees received from incorporations from March 19, 1903, to June 30, 1904.*

1903.		1904.	
March .....	\$1, 023. 90	January .....	\$2, 170. 15
April .....	3, 326. 00	February .....	3, 096. 60
May .....	2, 822. 60	March .....	2, 905. 15
June .....	3, 002. 30	April .....	2, 833. 75
July .....	2, 634. 15	May .....	2, 821. 50
August .....	2, 349. 40	June .....	2, 579. 40
September .....	2, 517. 70		
October .....	2, 330. 70	Total .....	<hr/> 41, 111. 25
November .....	2, 555. 05		
December .....	2, 142. 90		

*Statement of warrants and coupons canceled during June, 1904.*

## Warrants:

Territorial school fund .....	\$340. 80
University fund .....	1, 201. 58
Territorial prison fund .....	3, 906. 74
Capitol-building fund .....	370. 06
License and inspection fund .....	404. 05
Territorial industrial-school fund .....	874. 75
Ranger fund .....	2, 475. 57
Territorial prison-improvement fund .....	253. 84
General fund .....	4, 436. 48
Insane-asylum fund .....	2, 781. 25
Agricultural college .....	5, 000. 00

Total .....

---

24, 570. 12

## Coupons:

From 5 per cent funding bonds, 1 No. 23, due January 15, 1904 (\$25) ..	25. 00
From capitol building interest, 100 No. 12, due June 1, 1904 (\$25) ...	2, 500. 00

Total .....

---

2, 525. 00

## TERRITORIAL TREASURER.

*Statement of the bonded indebtedness of the Territory of Arizona on June 30, 1904.*

Date.	Title.	Time.	Rate.	Amount.
		<i>Years.</i>	<i>Per cent.</i>	
July 1, 1885	Insane-asylum bonds .....	20	7	\$20,000.00
Jan. 15, 1888	Territorial funding bonds .....	25	6	140,000.00
July 15, 1892	do. ....	50	5	2,000,000.00
Jan. 15, 1896	do. ....	50	5	300,000.00
Jan. 15, 1903	do. ....	50	3	318,275.29
Do. ....	do. ....	50	5	92,000.00
July 1, 1892	World's Fair bonds .....	20	5	30,000.00
June 1, 1898	Capitol-building bonds .....	50	5	100,000.00
Jan. 2, 1902	University bonds .....	20	5	25,000.00
Jan. 1, 1903	St. Louis Exposition bonds .....	20	5	30,000.00
	Total .....			3,055,275.29
	Deduct county and city funded indebtedness .....			2,044,302.86
	Total bonded debt of the Territory .....			1,010,972.43

The entire floating debt of the Territory has been wiped out, leaving the sum of \$20,848.85 in the general fund.

*Receipts from all sources for the year ended June 30, 1904.*

Balance, July, 1903 .....	\$177,762.54
Apache County .....	13,254.16
Cochise County .....	57,061.91
Coconino County .....	41,029.00
Gila County .....	16,427.66
Graham County .....	47,209.08
Maricopa County .....	120,280.61
Mohave County .....	16,772.74
Navajo County .....	15,728.36
Pima County .....	49,201.61
Pinal County .....	22,563.19
Santa Cruz County .....	13,985.02
Yavapai County .....	115,096.90
Yuma County .....	15,568.43
Prescott city .....	4,563.10
Tucson city .....	1,085.60
Tombstone city .....	690.62
Revised Statutes sold .....	453.65
Fees, articles of incorporation .....	31,359.35
Secretary board of control .....	4,109.10
Insurance tax .....	19,350.12
Superintendent Territorial prison .....	6,993.05
Secretary live-stock sanitary board .....	14,203.47
United States Treasurer .....	25,000.00
Balance on bonds sold .....	145.25
Refund from university .....	27.75
	<hr/> \$829,922.27

## DISBURSEMENTS.

General fund .....	173,163.92
Asylum for insane, interest fund .....	36,740.94
Asylum for insane, improvement fund .....	3,699.12
Asylum for insane, redemption of bonds .....	10,154.00
University interest fund, par. 3663 .....	1,250.00
University fund .....	23,198.23
Normal-school fund .....	30,582.47
Normal-school dormitory fund .....	290.87
Northern Arizona Normal-School fund .....	19,058.15
Territorial school fund .....	35,406.75
Territorial interest fund .....	136,223.26

Territorial prison fund.....	\$45,375.64
Territorial prison-improvement fund.....	6,519.37
Capitol-building fund.....	6,076.84
Capitol interest fund.....	5,175.00
Territorial Industrial School.....	24,246.36
License and inspection fund.....	14,760.87
Agricultural college.....	25,000.00
Interest World's Fair bonds.....	1,500.00
Interest St. Louis Exposition bonds.....	750.00
Tempe Normal School building fund.....	20,687.01
Ranger fund.....	20,769.66
Cash on hand June 30, 1904.....	189,293.85
	<hr/> \$829,922.27

*Statement of the balances in the various funds in the Territorial treasury June 30, 1904.*

General fund.....	\$23,995.92
Insane-asylum fund.....	16,042.24
University interest fund.....	1,977.02
Normal-school fund.....	55.84
Territorial school fund.....	3,034.84
Territorial interest fund.....	73,967.11
Northern Arizona Normal-School fund.....	176.47
Redemption fund.....	1,113.21
University fund.....	13,806.44
Interest on World's Fair bonds.....	940.43
Prison fund.....	22,833.90
Capitol-building fund.....	8,505.74
Capitol interest fund.....	1,989.52
Insane-asylum improvement fund.....	3,684.49
License and inspection fund.....	5,426.26
Territorial Industrial-School fund.....	6.02
Ranger fund.....	2,645.59
Prison-improvement fund.....	5,051.07
Northern Arizona Normal-School fund.....	236.16
Tempe Normal-School building fund.....	1,649.11
Interest St. Louis International Exposition bonds.....	1,329.87
University interest fund.....	709.98
Normal School of Arizona dormitory fund.....	116.62
Total.....	<hr/> 189,293.85

The Territorial funds have been deposited in several of the banks of Arizona for safe-keeping, a sufficient bond in the sum of \$50,000 having been provided by each of the banks for the protection and security of the funds so deposited. The distribution of the Territorial funds in the various banks on June 30, 1904, was as follows:

The Valley Bank of Phoenix.....	\$40,129.05
National Bank of Arizona, Phoenix.....	19,640.43
The Bank of Arizona, Prescott.....	21,238.30
Consolidated National Bank, Tucson.....	22,102.33
Bank of Bisbee, Bisbee.....	13,644.89
Gila Valley Bank and Trust Company, Solomonville.....	5,043.93
Guaranty Trust Company, New York.....	65,124.13
Phoenix National Bank.....	2,370.79
Total.....	<hr/> 189,293.85



**BANK COMPTROLLER.**

The Territorial auditor also acts as the bank comptroller in this Territory.

*Condition of Territorial banks, June 30, 1904.*

**RESOURCES.**

Name of bank.	Loans, discounts, and overdrafts.	Stocks, securities, and claims.	Real estate, furniture, and fixtures.	Cash and due from banks.
Bank of Arizona, Prescott.....	\$544,050.28	\$177,610.00	\$45,600.00	\$422,016.09
The Bank of Bisbee, Bisbee.....	462,521.46	106,738.92	16,250.00	464,186.86
The Arizona Central Bank, Flagstaff.....	423,413.31	20,893.82	45,607.66	136,535.71
The Valley Bank, Phoenix.....	256,665.48	140,521.48	110,120.00	122,254.51
Farmers and Merchants' Bank, Tempe.....	208,992.89	692.92	6,097.00	51,336.04
Gila Valley Bank and Trust Co., Solomonville.....	202,340.16	24,119.91	6,700.00	122,803.14
Miners and Merchants' Bank, Bisbee.....	234,309.00	19,618.32	25,388.70	129,464.29
Bank of Douglas, Douglas.....	134,464.56	23,704.53	4,075.32	158,256.21
Mesa City Bank, Mesa.....	91,196.49	2,517.53	5,103.95	18,404.18
The Bank of Safford, Safford.....	70,371.34	2,123.44	1,250.00	20,379.72
Bank of Yuma, Yuma.....	55,515.90	3,055.22	5,000.00	23,371.74
Home Savings Bank and Trust Co., Phoenix.....	44,080.72	.....	4,263.27	12,365.71
Southern Arizona Bank and Trust Co., Tucson.....	93,441.91	13,180.60	6,323.33	70,950.33
Commercial Trust Co., Prescott.....	177,045.80	12,000.00	1,500.00	5,367.01
Navajo County Bank, Winslow.....	85,333.13	.....	9,581.15	27,447.29
Miners and Merchants' Bank, Globe.....	48,329.86	5,713.55	4,504.22	30,486.43
Apache County Bank, Concho.....	24,985.59	1,746.84	700.62	14,228.43
J. W. Thornton & Son, Yuma.....	38,472.18	5,180.13	3,633.26	17,177.90
Graham County State Bank, Thatcher.....	18,345.38	3,444.71	1,722.90	6,749.52
Old Dominion Commercial Co., Globe.....	7,327.25	4,970.67	4,903.00	98,717.84
Bank of E. F. Sanguinetti, Yuma.....	18,982.29	2,937.07	.....	4,478.98
Gosney & Perkins Bank, Flagstaff.....	30,226.06	1,119.41	7,439.08	27,044.60
Total.....	3,270,411.04	571,889.07	315,763.46	1,984,021.93

**LIABILITIES.**

Name of bank.	Capital stock.	Surplus and undivided profits.	Deposits.	Total.
The Bank of Arizona, Prescott.....	\$50,000.00	\$100,000.00	\$1,039,276.37	\$1,189,276.37
The Bank of Bisbee, Bisbee.....	50,000.00	65,794.01	933,903.23	1,049,697.24
The Arizona Central Bank, Flagstaff.....	100,000.00	3,640.67	522,809.83	626,450.50
The Valley Bank, Phoenix.....	100,000.00	32,939.26	496,622.21	629,561.47
Farmers and Merchants' Bank, Tempe.....	40,000.00	17,782.79	209,336.06	267,118.85
Gila Valley Bank and Trust Co., Solomonville.....	50,000.00	18,539.50	287,423.71	355,963.21
Miners and Merchants' Bank, Bisbee.....	50,000.00	15,071.80	343,709.01	408,780.81
Bank of Douglas, Douglas.....	35,000.00	10,256.61	275,244.01	320,500.62
Mesa City Bank, Mesa.....	25,000.00	4,990.37	87,231.78	117,222.15
Bank of Safford, Safford.....	10,000.00	2,713.98	81,410.52	94,124.50
Bank of Yuma, Yuma.....	10,000.00	1,018.42	75,924.44	86,942.86
Home Savings Bank and Trust Co., Phoenix.....	10,610.00	1,596.74	48,502.96	60,709.70
Southern Arizona Bank and Trust Co., Tucson.....	50,000.00	4,497.32	129,398.85	183,896.17
Commercial Trust Co., Prescott.....	50,000.00	12,441.83	133,470.98	195,912.81
Navajo County Bank, Winslow.....	25,000.00	7,043.44	90,318.13	122,361.57
Miners and Merchants' Bank, Globe.....	25,000.00	5,978.07	58,055.99	89,034.06
Apache County Bank, Concho.....	15,200.00	3,516.58	22,944.19	41,661.48
J. W. Thornton & Son, Yuma.....	20,000.00	3,194.57	41,268.30	64,462.87
Graham County State Bank, Thatcher.....	10,000.00	2,893.46	17,369.05	30,262.51
Old Dominion Commercial Co., Globe.....	22,500.00	46,292.93	47,125.83	115,918.76
Bank of E. F. Sanguinetti, Yuma.....	.....	3,001.05	23,397.29	26,398.34
Gosney & Perkins Bank, Flagstaff.....	20,000.00	1,453.93	44,375.22	65,829.15
Total.....	768,310.00	364,656.83	5,009,118.67	6,142,085.50

*National banks of Arizona.*

## RESOURCES.

Name of bank.	Loans, discounts, and overdrafts.	Stocks, securities, and claims.	United States bonds and premiums.	Cash and due from banks.	United States redemption fund.	Banking house, furniture and fixtures.
Phoenix National Bank, Phoenix.....	\$458,099.10	\$110,877.36	\$100,000.00	\$359,711.18	.....	\$4,000.00
Prescott National Bank, Prescott.....	436,972.66	32,748.16	154,000.00	271,633.32	\$5,000.00	47,989.64
National Bank of Arizona, Phoenix.....	331,852.24	21,517.80	50,000.00	229,421.75	1,370.00	13,533.92
Consolidated National Bank, Tucson.....	362,641.71	67,547.50	106,200.00	545,672.64	.....	25,000.00
First National Bank of Globe, Globe.....	201,538.82	.....	53,445.31	86,747.58	.....	10,500.00
Arizona National Bank, Tucson.....	165,470.14	41,003.18	13,000.00	256,496.34	625.00	11,596.44
First National Bank of Clifton, Clifton.....	101,703.67	.....	31,392.18	25,964.54	1,500.00	10,937.58
First National Bank of Douglas, Douglas.....	117,525.03	1,603.93	13,400.00	99,495.82	625.00	14,664.22
First National Bank, Tombstone.....	83,592.75	20,382.12	6,500.00	57,326.02	325.00	2,003.20
Tempe National Bank, Tempe.....	61,746.16	1,145.49	6,593.75	31,319.42	312.50	2,300.00
First National Bank, Nogales.....	53,348.48	10,267.16	6,625.00	56,942.29	312.50	2,913.90
Total.....	2,374,490.76	307,092.70	541,156.24	2,020,730.90	10,070.00	145,438.90

## LIABILITIES.

Name of bank.	Capital stock.	Surplus and undivided profits.	National bank notes outstanding.	Deposits.	Total.
Phoenix National Bank, Phoenix.....	\$100,000.00	\$89,319.25	\$100,000.00	\$743,368.39	\$1,032,687.64
Prescott National Bank, Prescott.....	100,000.00	75,604.24	100,000.00	672,739.54	948,343.78
National Bank of Arizona, Phoenix.....	100,000.00	57,778.39	36,906.32	453,011.00	647,695.71
Consolidated National Bank, Tucson.....	50,000.00	56,162.89	50,000.00	950,898.96	1,107,061.85
First National Bank of Globe, Globe.....	50,000.00	5,597.87	50,000.00	246,633.84	352,231.71
Arizona National Bank, Tucson.....	50,000.00	24,847.72	3,850.00	409,493.38	488,191.10
First National Bank of Clifton, Clifton.....	30,000.00	9,630.52	30,000.00	101,867.45	171,497.97
First National Bank of Douglas, Douglas.....	50,000.00	5,883.35	12,500.00	178,930.65	247,314.00
First National Bank, Tombstone.....	25,000.00	7,241.00	6,500.00	131,388.09	170,129.09
Tempe National Bank, Tempe.....	25,000.00	1,666.99	5,250.00	71,500.33	103,417.32
First National Bank, Nogales.....	25,000.00	.....	6,250.00	99,159.33	130,409.33
Total.....	605,000.00	333,732.22	401,256.32	4,058,990.96	5,398,979.50

## COMPARATIVE STATEMENT TERRITORIAL BANKS.

	1903.	1904.	Gain.
RESOURCES.			
Loans, discounts, and overdrafts.....	\$3,009,917.79	\$3,270,411.04	.....
Stocks, securities, and claims.....	689,143.64	571,889.07	.....
Real estate, furniture, and fixtures.....	262,678.43	315,763.46	.....
Cash and due from banks.....	1,863,335.33	1,984,021.93	.....
Total.....	5,825,075.19	6,142,085.50	\$317,010.31
LIABILITIES.			
Capital stock.....	773,310.00	768,310.00	.....
Surplus and undivided profits.....	301,195.21	364,656.83	.....
Deposits.....	4,750,569.98	5,009,118.67	.....
Total.....	5,825,075.19	6,142,085.50	317,010.31
AGGREGATE IN TERRITORIAL AND NATIONAL BANKS.			
Territorial banks.....	4,750,569.98	5,009,118.67	258,548.69
National banks.....	3,730,784.12	4,058,990.96	328,206.84
Total.....	8,481,354.10	9,068,109.63	586,755.53

*Condition of building and loan associations.*

## RESOURCES.

Name.	Loans on real estate.	Loans on stock.	Sundry assets.	Real estate.	Cash.
Tucson Building and Loan Association, Tucson	\$217,845.00	.....	\$107,831.61	\$9,098.98	\$8,780.23
Citizens' Building and Loan Association, Tucson	234,337.85	\$23,594.77	8,536.01	2,167.69	25,229.89
Phoenix Building and Loan Association, Phoenix	132,375.19	9,442.20	2,817.42	21,287.28	7,165.36
Nogales Building and Loan Association, Nogales	92,160.00	.....	4,015.22	.....	3,361.94
Arizona Mutual Savings and Loan Association, Phoenix	41,733.40	5,784.21	661.58	773.20	11,461.89
Arizona Savings and Investment Co., Tucson	.....	66,653.98	5,666.20	14,300.80	47,200.19
Arizona Building and Loan Association, Tucson	21,900.00	1,100.00	956.54	252.85	489.73
Total	740,351.44	106,575.16	130,484.58	47,880.80	103,689.23

*Liabilities.*

	Capital stock accumulating.	Undivided profits.	Sundry accounts.	Bills payable.	Total.
Tucson Building and Loan Association, Tucson	\$141,993.11	\$189,154.54	\$12,408.17	.....	\$343,555.82
Citizens Building and Loan Association, Tucson	288,139.99	5,726.22	.....	.....	293,866.21
Phoenix Building and Loan Association, Phoenix	171,828.49	293.23	965.73	.....	173,087.45
Nogales Building and Loan Association, Nogales	92,062.86	4,900.30	2,485.50	\$88.50	99,537.16
Arizona Mutual Savings and Loan Association, Phoenix	57,626.06	2,398.16	390.06	.....	60,414.28
Arizona Savings and Investment Company, Tucson	132,603.65	1,217.52	.....	.....	133,821.17
Arizona Building and Loan Association, Tucson	21,828.97	400.32	469.83	2,000.00	24,699.12
Total	906,083.13	204,090.29	16,719.29	2,088.50	1,128,981.21

*Comparative statement.*

Resources.	1903.	1904.	Gain.
Loans on real estate	\$731,817.84	\$740,351.44	.....
Loans on stock	19,895.90	106,575.16	.....
Sundry assets	23,607.93	130,484.58	.....
Real estate	31,899.95	47,880.80	.....
Cash	22,272.97	103,689.23	.....
Total	829,494.59	1,128,981.21	\$301,486.62

*Statement of fees received by the bank comptroller during the fiscal years ending June 30, 1903 and 1904.*

## License fees, 1903:

From 33 banking institutions, at \$5	\$165.00	
From 7 building and loan associations, at \$5	35.00	
		\$200.00

## License fees, 1904:

From 30 banking institutions, at \$5	150.00	
From 10 building and loan associations, at \$5	50.00	
		200.00

## Examination fees, 1903:

Nine institutions, at \$40 each	360.00	
Four institutions, at \$35 each	140.00	
Thirteen institutions, at \$30 each	390.00	
Six institutions, at \$25 each	150.00	
		1,040.00



## Examination fees, 1904:

Eight institutions, at \$40 each.....	\$320. 00
Four institutions, at \$35 each .....	140. 00
Sixteen institutions, at \$30 each .....	480. 00
Six institutions, at \$25 each .....	150. 00
	<hr/> \$1, 090. 00
Total fees received .....	2, 530. 00

## BOARD OF EQUALIZATION.

*Tax levy for 1904.*

	On each \$100.
General fund, paragraph 3831, R. S. of 1901.....	\$0. 20
Insane asylum interest fund, paragraph 3615, R. S. of 1901 .....	. 10
Normal school fund, paragraph 3702, R. S. of 1901 .....	. 05
Territorial school fund, paragraph 2246, R. S. of 1901 .....	. 03
University fund, paragraph 3652, R. S. of 1901 .....	. 06
Prison fund, paragraph 3601, R. S. of 1901 .....	. 12
Ranger fund, paragraph 3229, R. S. of 1901 .....	. 05
Redemption fund, paragraph 3615, R. S. of 1901 .....	. 025
Interest World's Fair bonds, act 103, laws of 1891 .....	. 0038
Interest fund, paragraph 2047, organic laws and act of Congress of 1890.....	. 1307
University interest fund, paragraph 3663, R. S. of 1901 .....	. 005
Capitol interest fund, act 9, laws of 1897 .....	. 0125
Tempe Normal School fund, act 38, sec. 1, laws of 1903.....	. 025
Tempe Normal School building fund, act 38, sec. 4, laws of 1903.....	. 04
University interest fund, act 47, sec. 10, laws of 1903 .....	. 0017
Northern Arizona Normal School fund, act 71, sec. 1, laws of 1903 .....	. 03
Northern Arizona Normal School fund, act 71, sec. 2, laws of 1903 .....	. 01
Territorial Industrial School fund, act 72, sec. 2 (A), laws of 1903.....	. 01
Territorial Industrial School improvement fund, act 72, sec. 2 (B), laws of 1903 .....	. 04
Interest St. Louis Exposition bonds, act 86, laws of 1901 .....	. 0038
Interest insane asylum bonds, act 73, laws of 1903 .....	. 0025
Total .....	. 9500

## VALUATION OF TAXABLE PROPERTY.

At the meeting of the board of equalization the following final valuations were placed upon the taxable property of the different counties of the Territory:

SCHEDULE A.—*Final valuations of property in each county in Arizona for 1904.*

## APACHE COUNTY.

Property.	Number.	Valuation.	Per cent increased.
Cultivated land .....	2, 640	\$33, 000. 00	.....
Improvements .....		226, 425. 25	.....
Uncultivated land .....	1, 000	1, 250. 00	.....
Improvements .....		27, 482. 62	.....
Railroad land .....	788, 522. 37	151, 938. 02	.....
Town and city lots .....	315	14, 187. 50	.....
Improvements .....		48, 645. 00	.....
Horses:			
Range .....	1, 575	15, 750. 00	.....
Work .....	500	22, 850. 00	.....
Saddle .....	200	4, 015. 00	.....
Stallions .....	10	750. 00	.....
Mules .....	60	1, 800. 00	.....
Asses .....	200	1, 400. 00	.....
Cattle:			
Range and stock .....	2, 862	34, 344. 00	.....
Milch cows .....	237	5, 925. 00	.....
Sheep .....	69, 444	138, 888. 00	.....
Goats .....	1, 000	2, 000. 00	.....
Swine .....	80	232. 00	.....
Railroad, standard gauge .....	55, 482	a 255, 509. 21	.....
All other property .....		58, 254. 00	.....
Total .....		1, 044, 645. 60	.....

a Estimated

## SCHEDULE A.—Final valuation of property in each county in Arizona for 1904—Continued.

## COCHISE COUNTY.

Property.	Number.	Valuation.	Per cent increased.
Cultivated land.....acres..	35,636	\$120,468.00	.....
Improvements.....		42,840.00	.....
Land grants.....acres..	64,673	143,295.00	.....
Patented mines.....	565	136,896.00	.....
Improvements on patented mines.....		753,761.00	.....
Improvements on unpatented mines.....		72,960.00	.....
Town and city lots.....	10,470	804,186.00	.....
Improvements.....		1,216,240.00	.....
Horses:			
Range.....	1,038	10,760.00	.....
Work.....	1,049	36,039.00	.....
Saddle.....	1,356	27,340.00	.....
Stallions.....	9	615.00	.....
Mules.....	137	5,060.00	.....
Asses.....	32	160.00	.....
Cattle:			
Range and stock.....	29,333	293,945.00	.....
Milch cows.....	311	7,775.00	0.97
Bulls.....	334	15,920.00	.....
Sheep.....	170	390.00	.....
Goats.....	4,725	10,902.00	.....
Swine.....	248	800.00	.....
Railroad, standard gauge.....miles..	253	1,534,166.00	.....
Pullman Company.....		7,396.00	.....
All other property.....		1,047,783.49	.....
Merchandise.....		560,435.00	.....
Total.....		6,850,132.49	.....

## COCONINO COUNTY.

Cultivated land.....acres..	292,613.13	\$340,480.00	.....
Improvements.....		32,350.00	.....
Railroad land.....acres..	409,167.04	526,630.48	.....
Patented mines.....	3	3,240.00	.....
Improvements on patented mines.....		4,650.00	.....
Improvements on unpatented mines.....		17,095.00	.....
Town and city lots.....		153,602.50	.....
Improvements.....		315,930.00	.....
Horses:			
Range.....	2,182	21,820.00	.....
Work.....	831	33,240.00	.....
Saddle.....	783	19,575.00	.....
Stallions.....	5	650.00	.....
Mules.....	45	1,800.00	.....
Asses.....	232	1,160.00	.....
Cattle:			
Range and stock.....	17,408	180,172.80	.....
Beef.....	5	100.00	.....
Milch cows.....	247	7,410.00	.....
Bulls.....	27	405.00	.....
Sheep.....	161,300	324,512.00	.....
Goats.....	2,006	4,012.00	.....
Swine.....	135	675.00	.....
Railroad:			
Standard gauge.....miles..	23	34,650.00	.....
Narrow gauge.....do.....	131.66	<sup>a</sup> 572,750.00	.....
All other property.....		643,394.12	.....
Total.....		3,240,483.90	.....

<sup>a</sup> Estimated.

SCHEDULE A.—*Final valuations of property in each county in Arizona for 1904—Cont'd.*

## GILA COUNTY.

Property.	Number.	Valuation.	Per cent increased.
Cultivated land ..... acres..	5,186	\$17,832.00	.....
Improvements .....		5,760.00	.....
Patented mines .....	69	138,150.00	.....
Improvements on patented mines.....		176,470.00	.....
Improvements on unpatented mines.....		77,630.00	.....
Town and city lots .....		138,330.00	.....
Improvements .....		246,420.00	.....
Horses:			
Range .....	1,017	10,170.00	.....
Work .....	479	11,975.00	0.16
Saddle .....	1,287	25,755.00	.....
Stallions .....	4	180.00	.....
Mules .....	81	2,047.00	.....
Asses .....	145	720.00	.....
Cattle:			
Range and stock .....	25,059	250,590.00	.....
Milch cows.....	132	3,300.00	.....
Bulls .....	7	145.00	24.7
Sheep .....	1,322	2,645.00	.....
Goats .....	16,904	33,808.00	.....
Swine .....	230	690.00	.....
Railroad, standard guage.....miles..	32.24	88,860.00	.....
All other property .....		250,550.00	.....
Total .....		1,481,827.00	.....

## GRAHAM COUNTY.

Cultivated land ..... acres..	52,616	\$482,435.50	.....
Improvements .....		416,725.80	.....
Patented mines .....	135	432,933.32	.....
Town and city lots .....		109,785.00	.....
Improvements .....		217,750.00	.....
Horses:			
Range .....	989	9,890.00	.....
Work .....	1,154	46,160.00	.....
Saddle .....	2,185	54,625.00	.....
Stallions .....	13	945.00	.....
Mules .....	150	6,000.00	.....
Asses .....	350	3,500.00	.....
Cattle:			
Range and stock .....	39,999	399,990.00	.....
Milch cows.....	813	20,325.00	.....
Bulls .....	45	1,180.00	.....
Sheep .....	40	80.00	.....
Goats .....	15,532	31,064.00	.....
Swine .....	395	1,185.00	.....
Railroad, standard guage.....miles..	158	552,883.10	.....
All other property .....		2,217,976.14	.....
Total .....		5,005,432.86	.....



## SCHEDULE A.—Final valuations of property in each county in Arizona in 1904.—Cont'd.

## MARICOPA COUNTY.

Property.	Number.	Valuation.	Per cent increased.
Cultivated land.....acres..	289,654	\$3,560,682.00	.....
Improvements.....		435,409.00	.....
Patented mines.....	12	6,000.00	.....
Town and city lots.....	14,899	2,414,085.00	.....
Improvements.....		1,765,295.00	.....
Horses:			
Range.....	1,634	16,340.00	.....
Work.....	4,243	106,075.00	.....
Saddle.....			.....
Stallions.....	20	1,785.00	.....
Ostriches.....	900	40,000.00	.....
Mules.....	218	5,450.00	3.21
Asses.....	8	575.00	.....
Cattle:			
Range and stock.....	19,267	192,670.00	.....
Calves.....	2,627	13,135.00	.....
Milch cows.....	5,203	130,075.00	.....
Bulls.....	254	6,032.00	.....
Sheep.....	2,279	4,558.00	.....
Goats.....	1,406	2,109.00	.....
Swine.....	3,862	7,724.00	.....
Railroad, standard guage.....miles..	97.59	522,831.76	.....
All other property.....		1,182,495.24	.....
Total.....		10,413,326.00	.....

## MOHAVE COUNTY.

Cultivated land.....acres..	1,070.50	\$3,915.00	.....
Improvements.....		98,723.50	.....
Railroad land.....acres..	42,445.03	8,489.00	.....
Patented mines.....do..	2,599.54	147,775.00	.....
Improvements on patented mines.....		119,964.00	.....
Improvements on unpatented mines.....		26,280.00	.....
Town and city lots.....	723	36,792.70	.....
Improvements.....		76,290.00	.....
Horses:			
Range.....	486	9,720.00	.....
Work.....	203	10,150.00	.....
Saddle.....	518	18,130.00	.....
Brood mares.....	29	595.00	.....
Mules.....	14	500.00	.....
Asses.....	53	285.00	.....
Cattle:			
Range and stock.....	8,288	82,880.00	.....
Milch cows.....	107	2,675.00	25.00
Bulls.....	3	75.00	.....
Sheep.....	5,020	10,060.00	.....
Goats.....	1,350	2,700.00	.....
Swine.....	55	275.00	.....
Railroad, standard guage.....miles..	107.881	539,405.00	.....
All other property.....		116,669.09	.....
Household and kitchen furniture, less widow's exemption, \$9,886.....		6,227.00	.....
Total.....		1,308,689.29	.....

## SCHEDULE A.—Final valuations of property in each county in Arizona for 1904—Cont'd.

## NAVAJO COUNTY.

Property.	Number.	Valuation.	Per cent increased.
Cultivated land.....acres..	2, 879	\$33, 197. 20	.....
Uncultivated land.....do....	9, 239	15, 748. 98	.....
Improvements.....		8, 896. 00	.....
Railroad land.....acres..	721, 108. 57	144, 221. 71	.....
Land grants.....do....	323, 721. 89	64, 744. 18	.....
Improvements.....		1, 000. 00	.....
Patented land.....	37, 638. 76	94, 096. 90	.....
Town and city lots.....		68, 226. 20	.....
Improvements.....		146, 397. 40	.....
Horses:			
Range.....	1, 359	10, 599. 00	.....
Work.....	465	16, 150. 00	.....
Saddle.....	343	7, 059. 00	.....
Stallions.....	5	450. 00	.....
Mules.....	10	320. 00	.....
Asses.....	135	675. 00	.....
Cattle:			
Range and stock.....	3, 666	36, 660. 00	0. 04
Milch cows.....	460	11, 500. 00	25. 00
Bulls.....	5	100. 00	.....
Sheep.....	73, 460	146, 920. 00	.....
Goats.....	1, 550	3, 100. 00	.....
Swine.....	229	985. 50	.....
Railroad, standard gauge.....miles..	57. 155	a 263, 200. 00	.....
All other property.....		188, 576. 90	.....
Total.....		1, 262, 823. 97	.....

a Estimated.

## PIMA COUNTY.

Cultivated land.....acres..	60, 089	\$241, 823. 00	.....
Improvements.....		150, 706. 00	.....
Land grants.....acres..	17, 208	12, 906. 00	.....
Improvements.....		2, 000. 00	.....
Patented mines.....	188	66, 100. 00	.....
Improvements on patented mines.....		2, 000. 00	.....
Improvements on unpatented mines.....		4, 500. 00	.....
Town and city lots.....		828, 788. 00	.....
Improvements.....		1, 338, 586. 00	.....
Horses:			
Range.....	1, 112	11, 625. 00	.....
Work.....	597	14, 925. 00	25. 0
Saddle.....	623	12, 460. 00	47. 4
Stallions.....	18	450. 00	.....
Mules.....	53	1, 405. 00	.....
Asses.....	8	40. 00	.....
Cattle:			
Range and stock.....	18, 865	188, 650. 00	83. 15
Milch cows.....	265	6, 625. 00	44. 5
Bulls.....	210	4, 200. 00	.....
Sheep.....	3, 750	7, 500. 00	.....
Swine.....	80	240. 00	.....
Railroad, standard gauge.....miles..	64. 75	454, 674. 50	.....
Pullman Company.....		4, 428. 90	.....
All other property.....		754, 741. 00	.....
Total.....		4, 109, 463. 40	.....

SCHEDULE A.—*Final valuations of property in each county in Arizona for 1904—Cont'd.*

## PINAL COUNTY.

Property.	Number.	Valuation.	Per cent increased.
Cultivated lands ..... acres..	59,383	\$359,467.00	.....
Improvements .....		92,351.00	.....
Patented mines .....	41	41,100.00	.....
Improvements on patented mines .....		2,600.00	.....
Improvements on mill sites on patented mines .....	16	16,000.00	.....
Town and city lots .....	1,319	37,030.00	.....
Improvements .....		62,615.00	.....
Horses:			
Range .....	1,031	6,715.00	.....
Work .....	544	14,000.00	.....
Saddle .....	505	10,100.00	62.6
Mules .....	74	1,865.00	.....
Asses .....	53	270.00	.....
Cattle, all kinds .....	12,105	167,204	.....
Sheep .....	2,500	5,000.00	.....
Goats .....	939	1,898.00	.....
Swine .....	398	1,133.00	.....
Railroad, standard gauge..... miles..	80.29	478,687.19	.....
Rolling stock .....		62,973.25	.....
All other property .....		259,625.96	.....
Total .....		1,620,634.40	.....

## SANTA CRUZ COUNTY.

Cultivated land ..... acres..	11,525	\$32,428.00	.....
Improvements .....		58,491.00	.....
Land grants..... acres..	45,235	65,614.30	.....
Patented mines .....	50	68,800.00	.....
Improvements on patented mines .....		3,700.00	.....
Improvements on unpatented mines .....		64,625.00	.....
Town and city lots .....		205,239.00	.....
Improvements .....		257,690.00	.....
Horses:			
Range .....	1,266	12,660.00	.....
Work .....	333	8,655.00	.....
Saddle .....	553	11,060.00	1
Stallions .....	14	630.00	.....
Mules .....	81	2,025.00	.76
Asses .....	123	384.00	.....
Cattle:			
Range and stock .....	19,775	197,750.00	.....
Milch cows .....	63	1,799.00	.....
Bulls .....	251	4,982.50	.....
Goats .....	770	905.00	.....
Swine .....	75	211.00	.....
Railroad, standard gauge..... miles..	52.4	221,822.00	.....
Shetland ponies .....	19	220.00	.....
All other property .....		256,608.03	.....
Total .....		1,476,298.83	.....



SCHEDULE A.—*Final valuations of property in each county in Arizona for 1904—Cont'd.*

## YAVAPAI COUNTY.

Property.	Number.	Valuation.	Per cent increased.
Cultivated land.....acres..	86, 514. 38	\$179, 002. 20	.....
Improvements .....		105, 380. 00	.....
Railroad lands.....acres..	210, 809. 55	45, 469. 78	.....
Land grants.....do...	99, 445. 20	49, 722. 51	.....
Improvements .....		3, 000. 00	.....
Patented mines.....	1, 049	1, 029, 366. 28	.....
Improvements on patented mines.....		949, 614. 60	.....
Improvements on unpatented mines.....		175, 287. 00	.....
Town and city lots.....		534, 223. 50	.....
Improvements .....		881, 105. 00	.....
Horses:			
Range.....	1, 734	17, 340. 00	.....
Work.....	1, 692	47, 490. 00	.....
Saddle.....	1, 049	26, 225. 00	13. 37
Stallions.....	11	645. 00	.....
Mules.....	117	2, 675. 00	.....
Asses.....	229		.....
Cattle:			
Range and stock.....	26, 618	261, 480. 00	.....
Beef.....		15, 650. 00	.....
Milch cows.....	624	300. 00	.....
Bulls.....	11	41, 060. 00	.....
Sheep.....	20, 530	31, 203. 00	.....
Goats.....	15, 757	1, 778. 00	.....
Swine.....	594	264, 941. 25	.....
Railroads:			
Standard gauge.....miles..	60. 558	109, 200. 00	.....
Narrow gauge.....do...	27. 3		.....
All other property.....		1, 194, 754. 67	.....
Total.....		5, 973, 083. 79	.....

## YUMA COUNTY.

Cultivated land.....acres..	40, 134. 5	\$114, 240. 50	.....
Improvements .....		10, 050. 00	.....
Patented mines.....	20	8, 752. 00	.....
Improvements on patented mines.....		23, 730. 00	.....
Improvements on unpatented mines.....		20, 571. 50	.....
Town and city lots.....	764	194, 543. 50	.....
Improvements .....		100, 758. 00	.....
Horses:			
Range.....	268	2, 975. 00	.....
Work.....	883	22, 100. 00	.....
Saddle.....	64	1, 300. 00	.....
Stallions.....	5	230. 00	.....
Mules.....	92	2, 300. 00	0. 088
Cattle:			
Range and stock.....	1, 871	20, 581. 00	.....
Milch cows.....	290	7, 250. 00	25
Bulls.....	6	127. 00	.....
Swine.....	1, 355	4, 065. 00	.....
Railroad, standard gauge.....miles..	82. 5	579, 314. 99	.....
Pullman Company.....		5, 643. 00	.....
All other property.....		144, 172. 50	.....
Total.....		1, 282, 703. 79	.....

SCHEDULE B.—*Final valuation placed on railroad property for the year 1904.*

Name of company.	Number miles.	Rate per mile.	Valuation.
Southern Pacific.....	392.5	\$7,022.00	\$2,756,135.00
El Paso and Southwestern .....	96	6,750.00	648,000.00
Maricopa and S. R. V. R. R. ....	34.88	4,970.48	173,370.22
Arizona and New Mexico .....	40	5,504.50	220,180.00
New Mexico and Arizona .....	87.8	4,249.81	373,133.00
Morenci Southern.....	18	3,752.78	67,550.00
Central Arizona.....	11	2,000.00	22,000.00
Saginaw and Manistee Lumber Company.....	12	1,054.16 $\frac{1}{2}$	12,650.00
Gila Valley Globe and Northern .....	124.3	2,750.00	341,825.00
United Verde.....	27.3	4,000.00	109,200.00
Total .....	843.78		4,724,043.22
Pullman Company .....			80,059.74
Atchison, Topeka and Santa Fe.....	386.734		1,873,246.25
Total .....			6,677,349.21

SCHEDULE C.—*Total valuation, by counties, for the year 1904.*

County.	Valuation.
Apache.....	\$1,044,645.60
Cochise.....	6,850,132.49
Cocconino.....	3,240,483.90
Gila .....	1,481,827.00
Graham .....	5,005,432.86
Maricopa .....	10,413,326.00
Mohave .....	1,308,689.29
Navajo .....	1,262,823.97
Pima .....	4,109,463.40
Pinal .....	1,620,634.40
Santa Cruz .....	1,476,298.83
Yavapai .....	5,973,083.79
Yuma .....	1,282,703.79
Total .....	45,069,545.32

SCHEDULE D.—*Statement of the aggregate amount of each object of taxation in the Territory for the year 1904.*

950,179.51 acres of cultivated and uncultivated land .....	\$5,535,969.38
2,735,573.95 acres land grants and railroad lands.....	1,454,902.88
Improvements on lands .....	1,711,590.17
Improvements on land grants, etc .....	6,000.00
2,132 patented mines .....	1,931,517.60
Improvements, patented and unpatented mines .....	2,511,438.10
Town and city lots .....	5,539,018.90
Improvements .....	6,673,721.40
523,766 horses .....	772,052.00
900 ostriches .....	40,000.00
1,482 mules.....	36,747.00
1,218 asses.....	7,140.00
237,698 cattle .....	2,578,627.30
339,815 sheep .....	681,613.00
65,689 goats.....	123,701.00
7,736 swine .....	19,993.50
Value of railroad property .....	6,677,349.21
All other property.....	8,778,049.88
Total .....	45,079,431.32
Less widows' exemptions .....	9,886.00
Total value taxable property.....	45,069,545.32

*Mileage of railways.*

The roads now in operation in the Territory are as follows:

	Gauge.	Miles.
	<i>Feet.</i>	
Southern Pacific of Arizona, extending along the southern part of the Territory from Yuma, on the Colorado River, to the eastern boundary of Cochise County, passing through the counties of Yuma, Maricopa, Pinal, Pima, and Cochise.....	4.8½	383
Santa Fe Pacific, crossing north of the center of the Territory, near the thirty-fifth parallel, and passing through the counties of Apache, Navajo, Coconino, Yavapai, and Mohave.....	4.8½	393
Santa Fe, Prescott and Phoenix, running from Ash Fork, on the line of the Santa Fe Pacific, through the counties of Yavapai and Maricopa, to Phoenix.....	4.8½	197
Gila Valley, Globe and Northern, running from Bowie, on the Southern Pacific, in Cochise County, to Globe, Gila County.....	4.8½	140
New Mexico and Arizona, running from Benson, on the Southern Pacific, in Cochise County, to Nogales, in the same county, at the Mexican line.....	4.8½	87
Arizona and New Mexico, running from Clifton, in Graham County, to the Southern Pacific at Lordsburg, N. Mex.....	4.8½	71
Arizona and Southeastern, running from Bisbee, Cochise County, to Benson, on the Southern Pacific, in the same county.....	4.8½	54
Maricopa and Phoenix and Salt River Valley, running from Maricopa, Pinal County, on the Southern Pacific, to Phoenix, Maricopa County, with a branch from Tempe, Maricopa County, to Mesa, in the same county.....	4.8½	43
Prescott and Eastern, running from a point on the Santa Fe, Prescott and Phoenix, Yavapai County, to Mayer, in the same county.....	4.8½	27
United Verde and Pacific, running from Jerome Junction, on line of Santa Fe, Prescott and Phoenix Railway, to Jerome Junction, Yavapai County.....	3	26
Congress Gold Company, running from Congress Junction, on the Santa Fe, Prescott and Phoenix, in Yavapai County, to the Congress mine.....	4.8½	4
Arizona and Utah, running from McConico Junction, on the Santa Fe Pacific, in Mohave County, to Chloride, in the same county.....	4.8½	23
The Southeastern, from Don Louis Station, on the Arizona and Southeastern Railway, to Douglas, on the boundary line between Mexico and the United States.....	4.8½	22½
A branch of the Arizona and Southeastern, from Don Louis Station to Naco.....	4.8½	6
The Morenci Southern, from Guthrie, on the Arizona and New Mexico, to Morenci.....	3	18
The Santa Fe and Grand Canyon, from Williams, on the Santa Fe, to the Grand Canyon of the Colorado.....	4.8½	64
El Paso and Southwestern, entering Arizona at the eastern border of Cochise County and passing southwest to Bisbee and Naco.....	4.8½	156½
Arizona and Colorado.....	4.8½	18
Tombstone branch of the El Paso and Southwestern, running from Fairbank to Tombstone, in Cochise County.....	4.8½	9½
Phoenix and Eastern, running from Phoenix to Mesa, Florence, and Kelvin.....	4.8½	81
Bradshaw Mountain, running from Mayer to Crown King, in Yavapai County.....	4.8½	28
Arizona Southern, running from Red Rock, on the Southern Pacific, to Silverbell...	4.8½	22

## SETTLEMENT OF LANDS.

There are two land districts in this Territory, one with headquarters at Tucson, comprising the counties of Pima, Yuma, Maricopa, Pinal, Santa Cruz, Graham, Cochise, and Gila; the other at Prescott, comprising the counties of Yavapai, Mohave, Coconino, Navajo, and Apache. The Tucson land district contains 45,318 square miles and the Prescott district 68,000. Following are the reports submitted by the registers of the two districts showing the business transacted during the fiscal year ended June 30, 1904:



*Statement of the business transacted at the Tucson, Ariz., land office for the fiscal year ending June 30, 1904.*

Class of entry.	Number.	Acres.	Commissions.	Fees.	Amount.
Sales of mineral lands.....	71	6,325,598	.....	.....	\$26,930.00
Sales of abandoned military reservations.....	3	276.87	.....	.....	696.08
Excess payments on homesteads and other entries.....	43	122.77	.....	.....	153.46
Original entries under desert-land act.....	32	5,074.27	.....	.....	1,268.56
Final entries under desert-land act.....	12	1,952.63	.....	.....	1,952.63
Homestead entries commuted to cash entries under section 2301, Revised Statutes.....	56	8,422.67	.....	.....	10,528.34
Total cash sales.....	217	22,174.808	.....	.....	41,529.07
Original homestead entries.....	382	52,279.97	\$1,954.50	\$3,425.00	5,379.50
Final homestead entries.....	74	9,744.36	365.44	.....	365.44
Final timber-culture entries.....	2	320	.....	8.00	8.00
Applications to purchase mineral lands.....	85	.....	.....	850.00	850.00
Mineral protests, adverse claims.....	15	.....	.....	150.00	150.00
Indian scrip location.....	1	40	.....	.....	.....
Valentine scrip filings.....	2	80	.....	2.00	2.00
Valentine scrip location.....	1	40	.....	1.00	1.00
Soldiers' and sailors' homestead declaratory statements.....	2	320.29	.....	6.00	6.00
State selections.....	2	320	.....	4.00	4.00
Amount received for cancellation notices.....	.....	.....	.....	24.00	24.00
Amount received for reducing testimony to writing.....	.....	.....	.....	1,044.42	1,044.42
Total of all classes of entries and amount received therefrom.....	783	85,319.428	2,319.94	5,514.42	49,363.43

*Tucson, Ariz., land district, July 1, 1904.*

Name of county.	Area in acres unappropriated and unreserved.			Area in acres reserved.	Area in acres appropriated.	Total area of land surface of the county in land district.	Brief description of character of unappropriated and unreserved land.
	Surveyed.	Unsurveyed.	Total.				
Apache.....	21,206	18,009	39,215	205,140	2,645	247,000	Mountainous.
Cochise.....	1,611,271	1,733,012	3,344,283	302,199	335,518	3,982,000	Mountainous, grazing, arid.
Gila.....	13,094	81,648	94,742	1,081,861	34,897	1,211,500	Do.
Graham.....	822,983	1,908,444	2,731,427	1,130,000	276,573	4,138,000	Do.
Maricopa.....	1,033,608	2,292,774	3,326,382	563,571	536,047	4,426,000	Grazing and arid.
Navajo.....	.....	.....	.....	70,000	.....	70,000	No vacant public land.
Pima.....	994,095	4,138,879	5,132,974	578,594	455,932	6,167,500	Mountainous, arid, grazing.
Pinal.....	467,756	2,079,795	2,547,551	684,328	242,621	3,474,500	Do.
Santa Cruz.....	247,938	298,574	546,512	222,917	30,071	799,500	Do.
Yuma.....	622,618	3,838,650	4,461,268	95,094	375,638	4,932,000	Do.
Total...	5,834,569	16,389,785	22,224,354	4,933,704	2,289,942	29,448,000	

*Statement of the business transacted at the Prescott, Ariz., land office for the fiscal year ending June 30, 1904.*

Name of county.	Area in acres unappropriated and unreserved.			Area in acres reserved.	Area in acres appropriated.	Total area of land surface of the county in land district.	Brief description of character of unappropriated and unreserved lands.
	Surveyed.	Unsurveyed.	Total.				
Apache.....	1,010,228	690,157	1,700,385	3,977,886	1,233,729	6,912,000	Mountainous, arid, grazing, timber.
Coconino....	1,915,515	2,902,355	4,817,870	6,440,545	434,585	11,693,000	Mountainous, grazing, farming.
Gila.....	51,275	1,216,243	1,321,023	392,619	4,358	1,718,000	Arid, broken.
Maricopa.....	153,295	7,391,932	1,369,538	1,446	4,016	1,375,000	Do.
Mohave.....	983,273	643,820	8,375,005	384,790	49,005	8,809,000	Do.
Navajo.....	1,268,581	3,238,923	1,912,401	3,395,820	1,012,599	5,320,820	Do.
Yavapai.....	848,057	1,193,837	4,086,980	520,770	513,250	5,121,000	Mountainous, timber, grazing.
Yuma.....	.....	.....	1,193,837	201,600	63	1,395,500	Arid, grazing, broken.
Total..	6,230,224	18,547,015	24,777,039	15,315,476	3,251,605	43,344,320	

*Schedule of the business transacted at the Prescott, Ariz., land office for the fiscal year ending June 30, 1904—Continued.*

	Number.	Acres.
ORIGINAL ENTRIES.		
Homestead entries.....	71	9,841
Desert land.....		
Mineral applications.....	70	10,643
Indian allotments.....		
Declaratory statements.....	2	320
Total.....	143	20,804
FINAL ENTRIES.		
Homestead.....	53	8,172
Commuted cash, including excess.....	8	461
Desert land.....		
Mineral entries.....	57	3,950
Railroad selections.....	7	156,218
Total.....		168,801

#### CUSTOMS.

Trade relations with Mexico show a marked increase, the value of imports being \$7,735,586, as reported by the collector of customs at Nogales, Ariz. The domestic exports were \$5,139,412, and the foreign exports \$32,765.

#### INTERNAL REVENUE.

Arizona is included in the district of New Mexico, the two Territories being under the supervision of one collector of internal revenue with headquarters at Santa Fe, N. Mex. A deputy collector is appointed who has charge of the collections in this Territory. The collections in Arizona from this source during the past fiscal year were as follows:

Special-tax stamps.....	\$31,959.98
List, covers penalties and compromises for violations of law.....	1,012.07
Documentary stamps.....	5.00
Beer stamps.....	855.00
Tobacco stamps.....	999.00
Cigar stamps.....	7,658.19
Total.....	42,489.24

#### PROCLAMATIONS.

During the fiscal year the following proclamations were issued by the governor:

Proclamation issued August 24, 1903, designating September 7, 1903, as Labor Day.

Proclamation issued November 6, 1903, designating Thursday, November 26, 1903, to be observed as Thanksgiving Day.

Proclamation issued February 4, 1904, setting apart February 5, 1904, as Arbor Day for the counties of Maricopa, Pima, Pinal, Yuma, Graham, Gila, Santa Cruz, and Cochise, and April 8, 1904, as Arbor Day for the counties of Apache, Navajo, Coconino, Mohave, and Yavapai.

Proclamation issued May 26, 1904, closing all Territorial offices on May 27, 1904, in respect to the memory of Hon. Thomas W. Pemberton, ex-Territorial treasurer.

Proclamations to restore citizenship, 9; absolute pardons, 5; paroles, 9; extradition requests made by other States, 14; extradition requests made to other States, 12.

Number of notaries public appointed, 161; commissioners of deeds, 4.

#### PRECIPITATION OF RAIN AND SNOW.

To a large extent the snowfall of the winter months is depended upon to furnish irrigation water. The snows of the winter of 1903-4 were, however, so light that they did not affect the flow of water in streams to any considerable extent. Following is a comparative table showing the amount of snowfall at selected stations during November, December, January, February, and March for the past three years:

*Snowfall in inches.*

## NOVEMBER.

	1901.	1902.	1903.
Flagstaff .....	Trace.	58.2	0
Fort Huachuca .....	0	-----	0
Natural Bridge .....	0	6.0	0
Oracle .....	0	0	0
Pinal Ranch .....	0	2.0	0
Prescott .....	0	17.0	0
Taylor .....	0	0	0
Yarnell .....	0	10.0	0

## DECEMBER.

Flagstaff .....	1.0	16.9	1.0
Fort Huachuca .....	0.1	1.0	0
Natural Bridge .....	0	3.0	0
Oracle .....	0	2.0	0
Pinal Ranch .....	1.0	-----	0
Prescott .....	0	2.2	0
Taylor .....	2.5	0	Trace.
Yarnell .....	0	1.5	0

## JANUARY.

	1902.	1903.	1904.
Flagstaff .....	32.3	4.5	6.9
Fort Huachuca .....	0.5	0.4	1.0
Natural Bridge .....	12.0	0.5	6.0
Oracle .....	7.0	0	1.5
Pinal Ranch .....	14.2	0	3.5
Prescott .....	22.0	4.0	3.5
Taylor .....	11.0	1.1	1.1
Yarnell .....	8.0	0	2.0

## FEBRUARY.

Flagstaff .....	13.1	25.4	4.7
Fort Huachuca .....	0	9.5	1.2
Natural Bridge .....	0	27.0	5.0
Oracle .....	0	13.0	6.0
Pinal Ranch .....	0	-----	5.0
Prescott .....	Trace.	14.0	3.0
Taylor .....	1.0	24.0	5.7
Yarnell .....	Trace.	5.0	2.5

## MARCH.

Flagstaff .....	25.9	25.3	13.1
Fort Huachuca .....	0.2	0	0
Natural Bridge .....	6.0	0	0
Oracle .....	8.5	0	0
Pinal Ranch .....	8.5	0	0
Prescott .....	15.0	Trace.	4.0
Taylor .....	1.0	0	0
Yarnell .....	11.0	0	0



*Average annual precipitation for stations in Arizona for the period 1859-1903.*

Stations.	Latitude.	Longitude.	Elevation.	Record.		Years (inclusive).	Average annual precipitation.
				From—	To—		
	° ' "	° ' "	Feet.				
Flagstaff.....	35 12	111 37	6,907	1888	1903	7	24.69
Fort Apache.....	33 40	109 45	5,600	1872	1903	28	18.38
Fort Bowie.....	32 08	109 23	4,781	1867	1894	25	14.95
Fort Defiance.....	35 43	109 10	6,500	1889	1903	14	13.49
Fort Grant.....	32 36	109 53	4,780	1866	1903	31	14.40
Fort Huachuca.....	31 20	110 20	4,785	1886	1903	18	15.63
Fort Mohave.....	35 02	114 36	600	1859	1901	24	5.62
Gila Bend.....	32 59	112 46	737	1890	1901	11	5.05
Holbrook.....	34 55	110 10	5,047	1887	1900	13	8.06
Maricopa.....	33 08	112 02	1,190	1875	1903	23	5.37
Natural Bridge.....	34 26	111 34	4,999	1890	1903	14	20.29
Phoenix.....	33 28	112 00	1,108	1876	1903	20	6.90
Prescott.....	34 33	112 28	5,318	1865	1903	32	15.32
San Carlos.....	33 16	110 27	3,456	1881	1901	20	11.95
Signal.....	34 22	113 35	1,652	1889	1902	13	6.95
Texas Hill.....	32 48	113 40	355	1879	1900	17	3.17
Tucson.....	32 14	110 54	2,404	1867	1903	36	11.22
Williams.....	35 10	112 02	6,700	1888	1899	6	16.31
Yuma.....	32 44	114 36	141	1875	1903	27	2.77

*Summary of school statistics.*

School census and attendance.	1903.	1904.
Children between 6 and 21 years of age.....	25,951	27,324
Children between 8 and 14 years of age.....	13,311	14,461
Children enrolled in the public schools.....	20,008	21,366
Average daily attendance.....	12,105	13,239
Percentage of school population enrolled.....	77	78
Percentage of enrollment in daily attendance.....	60	61
SCHOOLS.		
High schools under special law.....	2	3
Grammar schools.....	131	147
Primary schools.....	333	351
Kindergarten schools.....	1	1
School districts.....	276	287
New districts organized.....	19	23
New schoolhouses built.....	11	20
TEACHERS.		
Men teachers employed.....	121	110
Women teachers employed.....	361	409
Number holding first-grade certificates.....	103	198
Number holding second-grade certificates.....	128	180
Number holding life diplomas.....	21	24
Number holding educational diplomas.....	37	45
Number holding Arizona normal diplomas.....	43	72
Average salary paid men teachers.....	\$80.00	\$81.05
Average salary paid women teachers.....	\$67.81	\$69.59
DIPLOMAS AND CERTIFICATES ISSUED.		
Life diplomas issued during the year (1904).....		1
Educational diplomas issued.....		8
First-grade certificates issued.....		138
Second-grade certificates issued.....		106
MISCELLANEOUS.		
Days school was in session.....	125	130
Volumes in school libraries.....	15,566	16,819
Valuation of school property.....	\$788,735	\$882,790

*Financial summary.*

	1903.	1904.
<b>RECEIPTS.</b>		
Balance on hand June 30, 1902.....	\$115,239.82	\$88,468.19
Received from Territorial taxes .....	25,761.02	32,438.75
Received from county taxes .....	221,458.28	216,589.03
Received from school taxes .....	27,659.68	54,461.95
Received from special district taxes .....	19,664.10	13,130.69
Received from licenses, fines, and other sources .....	65,526.49	65,194.10
Received from sale of bonds and in interest .....	25,223.78	65,870.87
Received from miscellaneous sources .....	927.09	19,705.84
Total receipts .....	501,460.26	555,859.42
<b>DISBURSEMENTS.</b>		
Paid for teachers' salaries .....	242,848.42	256,713.66
Paid for fuel, repairs, and contingent expenses .....	70,575.06	73,054.76
Paid for school libraries .....	433.41	477.03
Paid for apparatus .....	2,470.10	899.60
Paid for buildings and furniture .....	60,296.71	55,539.04
Paid for supervision and miscellaneous purposes .....	17,491.96	32,301.21
Paid in interest on bonds .....	20,024.61	19,843.00
Total disbursements .....	414,140.27	438,828.30
<b>SUPERVISION AND MISCELLANEOUS.</b>		
Territorial:		
Salary of superintendent of public instruction .....	1,800.00	1,800.00
Salary of board of examiners .....	600.00	600.00
Printing, postage, and contingent expenses .....	958.53	568.00
County:		
Salaries of county superintendents and miscellaneous expenses .....	12,646.60	32,301.21
Total .....	15,905.13	35,269.21
The deaf and dumb and the blind:		
California institution at Berkeley .....	2,025.00	1,025.00
Utah institution at Ogden .....	312.50	375.00
Total .....	2,337.50	1,400.00

**ROSTER OF TERRITORIAL OFFICERS.**

(Appointed by the President.)

**EXECUTIVE DEPARTMENT.**

Governor, Col. Alexander O. Brodie, Yavapai County; secretary of the Territory, Hon. W. F. Nichols, Cochise County.

**JUDICIARY DEPARTMENT.**

Supreme court: Hon. Edward Kent, chief justice, Phoenix; Hon. George R. Davis, associate justice, Tucson; Hon. Fletcher M. Doan, associate justice, Florence; Hon. Richard E. Sloan, associate justice, Prescott.

District court, first judicial district (comprising the counties of Pima, Yuma, and Santa Cruz): Judge, George R. Davis.

District court, second judicial district (comprising the counties of Pinal, Cochise, and Graham): Judge, Fletcher M. Doan.

District court, third judicial district (comprising the counties of Maricopa and Gila): Judge, Edward Kent.

District court, fourth judicial district (comprising counties of Yavapai, Mohave, Coconino, Apache, and Navajo): Judge, Richard E. Sloan.

United States district attorney: Hon. Frederick L. Nave, Nogales; assistant United States district attorney, Hon. John A. Campbell, Tucson.

United States marshal: Col. Myron H. McCord, Phoenix.

United States internal-revenue collector for Arizona and New Mexico: Hon. A. L. Morrison, Santa Fe, N. Mex.

United States land office, Prescott: Register, Fen. S. Hildreth, Prescott; receiver, J. M. W. Moore, Prescott.

United States land office, Tucson: Register, M. W. Moore, Tucson; receiver, John H. Bauman, Tucson.

United States surveyor-general: Hon. F. S. Ingalls, Yuma.

United States collector of customs: Edwin Baker, Nogales.

(Appointed by the governor.)

Attorney-general, Hon. Ed. W. Wells, Prescott; territorial auditor and bank comptroller, Hon. Isaac M. Christy, Phoenix; Territorial treasurer, Hon. E. E. Kirkland, Kirkland; superintendent of public instruction, Hon. Nelson G. Layton, Flagstaff; adjutant-general, Maj. B. W. Leavell, U. S. Army, Prescott; board of control, Col. Alexander O. Brodie, governor, chairman; Hon. Isaac M. Christy, auditor, member; Hon. George E. Truman, citizen member and secretary; private secretary to the governor, George H. Smalley, Tucson; assistant secretary of the Territory, Lew W. Collins, Phoenix.

Board of equalization: Hon. Isaac M. Christy, Territorial auditor, chairman; for the first judicial district, Hon. Alfred S. Donau, Tucson; for the second judicial district, Hon. George A. Olney, Safford; for the third judicial district, Hon. Frank Parker, Phoenix; for the fourth judicial district, Hon. Fred. W. Nelson, Winslow.

Territorial board of education: Col. Alexander O. Brodie, governor, chairman; Hon. Nelson G. Layton, superintendent of public instruction, secretary; Hon. Isaac M. Christy, Territorial treasurer; Dr. Kendrick C. Babcock, president of the University of Arizona; Prof. A. J. Matthews, principal of the Tempe normal school; Prof. A. N. Taylor, principal of the northern Arizona normal school at Flagstaff.

Board of regents, University of Arizona: Chaplain Winfield Scott, U. S. Army, retired, president of the board of regents and chancellor of the university; George J. Roskrige, Tucson, secretary; J. M. Ormsby, Tucson, treasurer; Col. M. J. Egan, Clifton; the governor and superintendent of public instruction ex officio members.

Loan commission: Col. Alexander O. Brodie, governor, chairman; Hon. W. F. Nichols, secretary of Arizona; Hon. Isaac M. Christy, Territorial auditor.

Territorial board of health: Col. Alexander O. Brodie, governor, president; Hon. Ed. W. Wells, attorney-general, vice-president; R. M. Dodsworth, M. D., superintendent of public health and secretary of the board.

Board of education of the Territorial normal school at Tempe: Nelson G. Layton, superintendent of public instruction, Phoenix; Alfred J. Peters, Tempe; Frank L. Drew, Tempe.

Board of education of the Territorial normal school at Flagstaff; Nelson G. Layton, superintendent of public instruction, Phoenix; A. A. Dutton, Flagstaff; C. O. Robinson, Flagstaff.

Territorial prison: Superintendent, Col. William M. Griffith, Tucson.

Territorial insane asylum: Superintendent, Dr. W. H. Ward, Phoenix.

Live-stock sanitary board: Hon. W. S. Sturges, Arivaca, chairman; Hon. J. J. Riggs, Dos Cabezas; Hon. C. T. Hirst, Phoenix.

Territorial veterinarian: Dr. J. C. Norton, Phoenix.

Fish and game commissioners: T. S. Bunch, Safford; Eugene Allison, Jerome; W. L. Pinney, Phoenix.

Board of dental examiners: William G. Lentz, Phoenix; Ralph G. Roper, Prescott; J. L. Hamilton, Phoenix; Edward H. Stiles, Tucson; Frank M. Metzgar, Prescott.

Board of medical examiners: Dr. C. W. Woods, Jerome; Dr. Ancil Martin, Phoenix; Dr. William Duffield, Phoenix; Dr. H. W. Fenner, Tucson; Dr. William L. Woodruff, Troy.

Board of trustees, Territorial industrial school: A. H. Emanuel, Tombstone, chairman; Henry Buehman, Tucson, secretary; Ben Heney, Fairbank.

Superintendent of the Territorial industrial school, F. R. O'Brien, Tombstone.

Commission for the promotion of uniformity of legislation in the United States: Hon. Edward Kent, Phoenix; Hon. E. E. Ellenwood, Prescott; Hon. George R. Davis, Tucson.

Board curators of the Territorial library: Hon. Edward Kent, Phoenix; Hon. J. H. Kibbey, Phoenix; Hon. T. T. Powers, Phoenix.

Board of pharmacy: T. L. McCutchen, Clifton; A. G. Hulet, Phoenix; C. A. Cover, Williams; Fred Fleishman, Tucson; Harry Brisley, Prescott; W. H. Butler, Globe; E. S. Wakelin, Phoenix.

Arizona Rangers: Thomas H. Rynning, Douglas, captain; John J. Brooks, Douglas, lieutenant; A. R. MacDonald, William Sparks, Harry C. Wheeler, Frank S. Wheeler, sergeants.

Board of managers for Arizona at the international exposition to be held at St. Louis, 1903: Hon. R. N. Leatherwood (first judicial district), Tucson; Hon. B. A. Packard (second judicial district), Bisbee; Hon. H. B. St. Claire (third judicial district), Phoenix; Hon. A. J. Doran (fourth judicial district), Prescott.

Honorary members of the board of managers for Arizona at the international exposition to be held at St. Louis, 1903:

Navapai County: Frank L. Wright, Prescott; A. A. Johns, Prescott; Mrs. Frances W. Munds, Prescott; Mrs. J. C. Martin, Prescott.



Maricopa County: Gates M. Fowler, Phoenix; D. L. Murray, Wickenburg; Henrietta H. Talbot, Phoenix; Vivea C. Kingsbury, Tempe.

Yuma County: Eugene F. Sanguinetti, Yuma; Mulford Winsor, Yuma; Mrs. Elizabeth S. Brown, Yuma; Mrs. Lee R. Patterson, Yuma.

Pinal County: Fred E. White, Florence; W. A. Weeks, Troy; Mrs. J. G. Keating, Florence; Mrs. F. M. Doan, Florence.

Apache County: J. S. Hubbell, St. Johns; J. T. Lesueur, St. Johns; Mrs. Josephine Schuster, St. Johns; Margaret E. Patterson, St. Johns.

Navajo County: J. H. Frisby, Snowflake; V. E. Butner, Winslow; Mrs. Annie M. Flinn, Winslow; Mrs. J. F. Mahoney, Winslow.

Coconino County: F. W. Sisson, Flagstaff; David Babbitt, Flagstaff; Mrs. Ellen Young, Williams; Mrs. E. L. Renoe, Flagstaff.

Mohave County: H. H. Watkins, Kingman; J. P. Finnegan, Chloride; Mrs. Charles Metcalf, Kingman; Mr. John Wesley Emerson, Kingman.

Cochise County: John Brockman, Pearce; B. A. Sneed, Naco; Mrs. H. A. Morgan, Willcox; Annie M. Dyer, Bisbee.

Graham County: A. T. Thomson, Clifton; Charles L. Rawlins, Solomonsville; Mrs. Emma V. Pickett, Morenci; Mrs. W. T. Webb, Pima.

Gila County: N. S. Berray, Globe; John C. Evans, Globe; Mrs. Sarah S. Martin, Globe; Mrs. J. B. Henry, Globe.

Pima County: L. W. Wakefield, Tucson; Barron M. Jacobs, Tucson; Mrs. John A. Black, Tucson; Mrs. Mary Bernard Aguirre, Tucson.

Santa Cruz County: W. F. Overton, Nogales; H. K. Chenoweth, Nogales; Mrs. James A. Harrison, Nogales; Mrs. Arthur E. Crepin, Patagonia.

(Elected.)

Delegate to Congress: Hon. J. F. Wilson, Prescott.

Secretaries and clerks of various boards: Assistant superintendent Territorial prison, U. G. Wilder, Yuma; secretary and storekeeper of the Territorial prison, Walter T. Gregory, Yuma; secretary of the live-stock sanitary board, H. Harrison, Phoenix; auditor's clerk and secretary of the board of equalization, Wesley A. Hill, Phoenix.

#### MEMBERS OF THE TWENTY-SECOND LEGISLATIVE ASSEMBLY.

*Council.*—Heber Jarvis, Eagar, Apache County; B. A. Packard, Bisbee, Cochise County; Henry F. Ashurst, Williams, Coconino County; A. H. Morehead, Globe, Gila County; H. B. Rice, Morenci, Graham County; J. H. Kibbey, Phoenix, Maricopa County; J. R. Whiteside, Chloride, Mohave County; J. X. Woods, Winslow, Navajo County; Joe B. Corbett, Tucson, Pima and Santa Cruz counties; E. W. Childs, Mammoth, Pinal County; J. W. Burson, Constellation, Yavapai County; Eugene S. Ives, Yuma, Yuma County.

*House of representatives.*—N. Gonzales, Springerville, Apache County; Steve Roemer, Benson, Cochise County; James A. Howell, San Bernardino, Cochise County; J. M. O'Connell, Bisbee, Cochise County; John H. Page, Grand View, Coconino County; Joseph B. Henry, Globe, Gila County; W. T. Webb, Pima, Graham County; Gus Williams, Clifton, Graham County; J. D. Marlar, Phoenix, Maricopa County; J. W. Woolf, Tempe, Maricopa County; G. U. Collins, Phoenix, Maricopa County (died January 1, 1904; no successor elected); T. T. Powers, Phoenix, Maricopa County; Kean St. Charles, Kingman, Mohave County; W. A. Parr, Winslow, Navajo County; L. O. Cowan, Tucson, Pima County; M. Lamont, Tucson, Pima County; N. W. Bernard, Tucson, Pima County; P. A. Schilling, Ray, Pinal County; L. C. Herr, Florence, Pinal County; B. J. Whiteside, Nogales, Santa Cruz County; Lucius R. Barrow, Prescott, Yavapai County; T. J. Morrison, Jerome, Yavapai County; W. A. Rowe, Walker, Yavapai County; F. S. Ingalls, Yuma, Yuma County (resigned October 22, 1903; Sanford E. Beach elected to succeed).

#### OFFICERS OF THE TWENTY-SECOND LEGISLATIVE ASSEMBLY.

*Council.*—President, Eugene S. Ives, Yuma; chief clerk, John C. Evans, Globe; enrolling and engrossing clerk, A. M. Foster, Yuma; watchman, Pedro G. de la Lama, Phoenix; messenger, Mark L. Dunbar, Phoenix; chaplain, E. A. Penick, Phoenix.

*House of representatives.*—Speaker, T. T. Powers, Phoenix; chief clerk, C. W. Miller, Tempe; enrolling and engrossing clerk, Geo. W. Shute, Globe; sergeant-at-arms, Thos. Hamilton, Santa Cruz; watchman, Juan B. Giron, Yavapai; messenger, Alfred A. Trippel, Tucson; chaplain, L. J. Hedgpeth, Phoenix.

## COUNTY OFFICIALS.

*Apache County.*—Board of supervisors: A. L. Truax, chairman; Benigno Lopez, Isaac Isaacson; J. R. Armijo, clerk. Probate judge, Capt. John T. Hogue; treasurer, Leandro Ortega; sheriff, Sylvester Peralta; recorder, J. R. Armijo; district attorney, Reamer Ling.

*Cochise County.*—Board of supervisors: J. J. Bowen, chairman; William Pritchett, Thomas R. York; John N. Gaines, clerk. Probate judge, F. R. O'Brien; recorder, Frank Hare; treasurer and tax collector, M. D. Scribner; district attorney, Seth Leavenworth; assessor, B. J. O'Reilly; school superintendent, C. A. Wallace; surveyor, George C. Clark; sheriff, A. V. Lewis.

*Coconino County.*—Board of supervisors: George Babbitt, chairman; A. T. Cornish, G. W. Martin; T. A. Flynn, clerk. Probate judge, A. E. Douglass; superintendent of schools, Harrison Conrad; sheriff, James A. Johnson; undersheriff, Robert J. Walker; district attorney, Edward M. Dowe; recorder, Harry C. Hibben; treasurer, Thomas Devine; surveyor, James A. Lamport. Precinct officers: Justice of the peace, Larry W. Quinlan; constable, William C. Bayless; school trustees, P. R. Weatherford, T. J. Coalter, J. W. Francis.

*Gila County.*—Board of supervisors: Lyman C. Woods, chairman; David Devore, J. G. Oldfield; C. T. Martin, clerk. Treasurer, H. H. Hitchcock; recorder, W. D. Fisk; district attorney, George R. Hill; sheriff, C. R. Rogers; justice of the peace, C. C. Curico; surveyor, Alex. Pendleton; constable at Globe, Andy Mayr.

*Graham County.*—Board of supervisors: Eugene Caruthers, chairman; Henry Hill, Ira Harper; Arturo M. Elias, clerk. Probate judge, P. C. Little; district attorney, C. L. Rawlins; sheriff, James V. Parks; treasurer, George B. Gamble; assessor, John J. Birdno; recorder, Mit Simms; surveyor, Harry Whittiker; school superintendent, William A. Moody.

*Maricopa County.*—Board of supervisors: F. C. Norris, chairman; Alexander Hunsaker, Jacob Miller; Neri Osborn, clerk. Sheriff, W. W. Cook; treasurer, J. Elliott Walker; recorder, B. Frank McFall; probate judge, J. C. Phillips; clerk probate court, George Kirkland; district attorney, A. C. Baker; assistant district attorney, Geo. Purdy Bullard; assessor, Frank Luke; superintendent of schools, A. H. Fulton; surveyor, George R. Sturdevant.

*Mohave County.*—Board of supervisors: J. H. Johnson, chairman; John S. Kolar, William Grant. Probate judge and superintendent of schools, J. A. Logan; recorder and clerk of the board of supervisors, John P. Feeny; treasurer and tax collector, Foster S. Dennis; district attorney, H. L. Dickson; sheriff and assessor, Henry Lovin.

*Navajo County.*—Board of supervisors: L. E. Divelbess, chairman; R. C. Creswell, F. F. Flickinger. Probate judge, F. J. Watron; district attorney, T. F. Moran; sheriff, C. I. Houck; treasurer, F. M. Zuck; recorder and clerk board of supervisors, A. F. McAllister. (No county surveyor qualified.)

*Pinal County.*—Board of supervisors: George J. Acton, chairman; J. F. Mahew, J. G. Keating. Probate judge and school superintendent, John C. Harris; treasurer and tax collector, Albert F. Barker; recorder and clerk board of supervisors, Thomas G. Peyton; district attorney, J. E. O'Connor; sheriff and assessor, Thomas N. Wills.

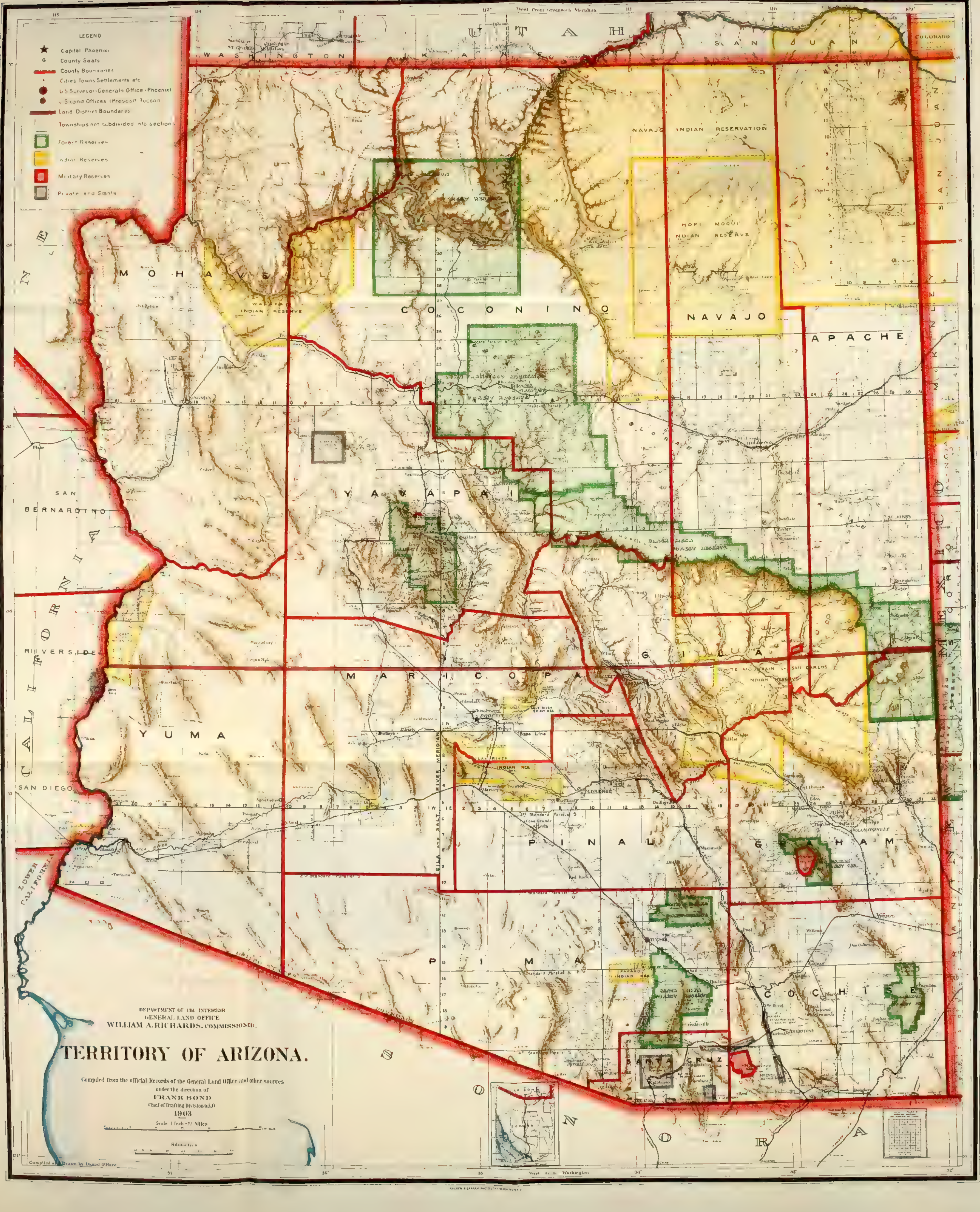
*Pima County.*—Board of supervisors: Ed. L. Vail, chairman; C. H. Bayless, Fred Ronstadt; John Mets, clerk. Probate judge, W. J. Kirkpatrick; recorder, Charles Shibell; sheriff, Frank Murphy; district attorney, Roscoe Dale; surveyor, Homer Santee; assessor, Lyman Wakefield; superintendent of schools, William Angus; road overseer, Nat Fullman; justices of the peace, William H. Culver and O. T. Richey; constables, Nabor Pacheco and Jack Dufton.

*Santa Cruz County.*—Board of supervisors: J. A. Harrison, H. Harmon, Richard Farrell. Sheriff, T. J. Turner; district attorney, F. J. Duffy; treasurer, G. B. Marsh; recorder, Phil Herold; probate judge, W. A. O'Connor; surveyor, C. E. Perkins.

*Yavapai County.*—Board of supervisors: G. H. Schuerman, chairman; D. G. Sinclair, Fred Stephens; J. H. Robinson, clerk. Sheriff, Jos. I. Roberts; treasurer and tax collector, J. P. Storm; probate judge, C. P. Hicks; recorder, P. J. Farley; district attorney, E. S. Clark; school superintendent, J. B. Jolly; assessor, D. J. Sullivan.

*Yuma County.*—Board of supervisors: S. B. Hinds, chairman; M. J. Nugent, W. E. Marvin; C. P. Cronin, clerk. Probate judge and superintendent of schools, D. L. DeVane; sheriff, Gus Livingston; undersheriff, Thomas Day; district attorney, W. F. Timmons; treasurer, E. F. Sanguinetti; surveyor, W. H. Elliott; county recorder, C. P. Cronin; superintendent of public health, Henri Ap. John.





- LEGEND
- ★ Capital Phoenix
  - ⊙ County Seats
  - County Boundaries
  - Cities Towns Settlements etc
  - U.S. Surveyor-General's Office (Phoenix)
  - U.S. Land Office (Prescott Tucson)
  - Land District Boundaries
  - Townships not subdivided into sections
  - Forest Reserve
  - Indian Reserves
  - Military Reserves
  - Private and Grants

DEPARTMENT OF THE INTERIOR  
GENERAL LAND OFFICE  
WILLIAM A. RICHARDS, COMMISSIONER.

# TERRITORY OF ARIZONA.

Compiled from the official Records of the General Land Office and other sources  
under the direction of  
**FRANK BOND**  
Chief of Drafting Division U.S.G.O.  
1903

Scale 1 Inch = 22 Miles

Kilometers

Compiled and Drawn by Daniel O'Hare







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REPORT OF THE GOVERNOR OF NEW MEXICO.

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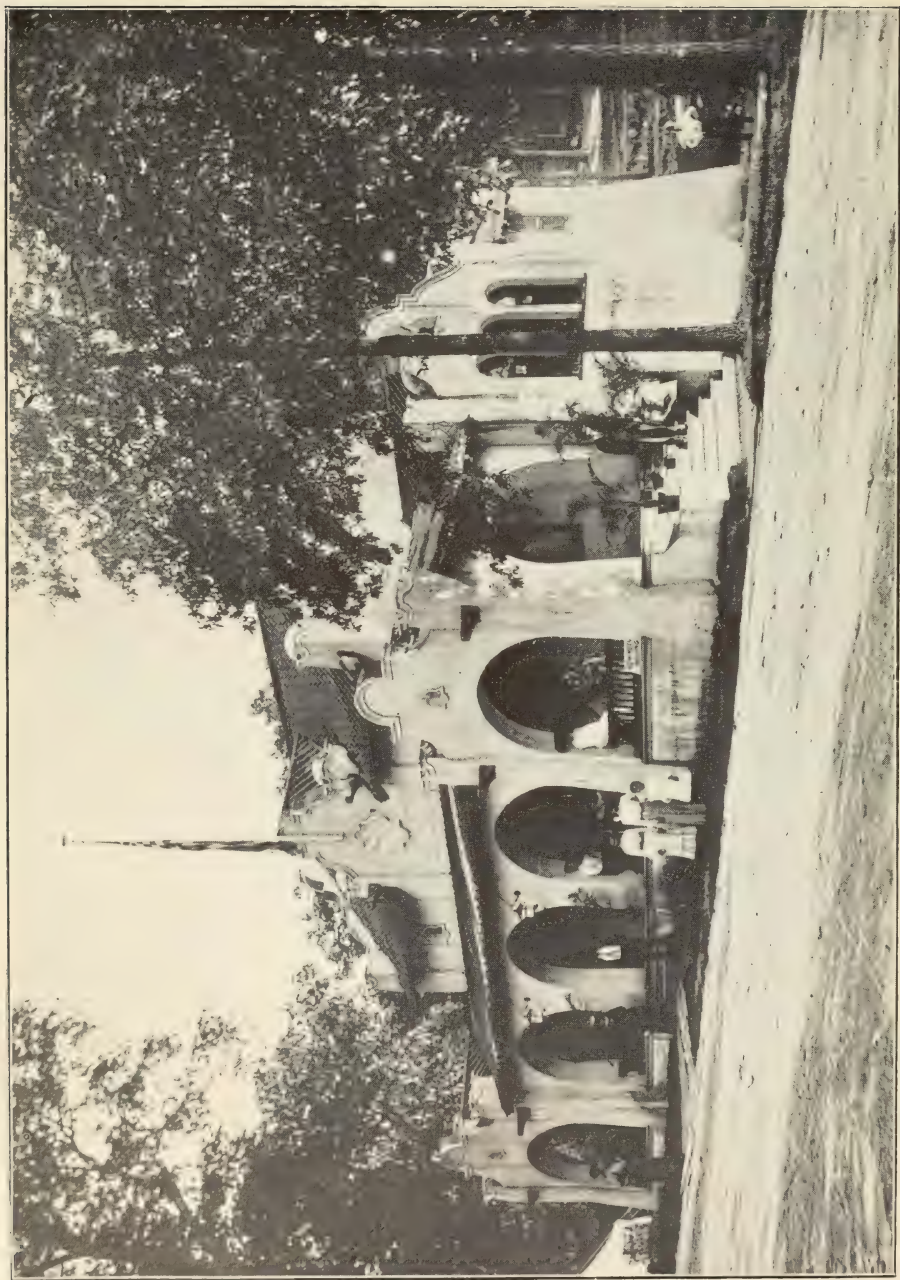




INTERIOR VIEW OF NEW MEXICO BUILDING AT LOUISIANA PURCHASE EXPOSITION.







EXTERIOR VIEW OF NEW MEXICO BUILDING AT LOUISIANA PURCHASE EXPOSITION.

# REPORT

OF THE

## GOVERNOR OF NEW MEXICO.

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EXECUTIVE OFFICE,  
*Santa Fe, N. Mex., September 15, 1904.*

SIR: In compliance with your request, I have the honor to transmit herewith my annual report for the fiscal year ending June 30, 1904. In obedience to your orders, the report is much more condensed than in former years; in fact, but one-half of the volume of last year. Detailed descriptions of the Territory and its various divisions, industries, and activities are entirely omitted, and only the reports of the officials and boards are included, some of these being abridged so as to reduce their length. These reports have been classified as far as possible. As an introduction the industrial and other progress of the year are briefly reviewed, and a statistical synopsis is given.

Hoping that the report in this shape meets with your approval, I have the honor to be, Sir,

Your very obedient servant,

MIGUEL A. OTERO,  
*Governor of New Mexico.*

The SECRETARY OF THE INTERIOR,  
*Washington, D. C.*

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### REVIEW OF THE PAST FISCAL YEAR.

New Mexico made advancement and progress under adverse circumstances during the twelve months covered by this report. Drouth conditions which were not broken until after that period curtailed production on the farm as well as upon the range, and made its influence felt in every channel of business and industry. Nevertheless, at this writing good crops are being harvested and cattle, sheep, and goats are in excellent condition and there is promise of abundant winter feed and water in most of the counties. The ranges are not overcrowded, as the lamb crop increase was only about 33 per cent this spring, and many sheep and cattle have been shipped or driven out of the Territory. The wool crop was almost 20,000,000 pounds, and there are to-day over 5,000,000 head of sheep, over 1,000,000 head of cattle, and over 100,000 goats upon the range.

In railroad building there has been a lull during the fiscal year, quite a contrast to the three or four years preceding, when the railroad

mileage was added to at a very satisfactory rate. Outside of the construction of about 50 miles of lumbering railway, no other railroad building was done; although at this writing work has been resumed upon the construction of the Albuquerque Eastern, and a number of surveying parties are in the field to lay out lines to be constructed in the near future.

Financially the Territory has been doing well; in fact, better than ever before in its history. The revenues are ample to meet all expenses, the public debt is being reduced, the taxable valuations are increasing at a very satisfactory rate.

The following review of financial affairs during the past seven years shows the improvement that has been made and explains the reason why New Mexico's credit is above par in the money centers:

To begin with, it has been necessary to tabulate the tax levies during the past nine years, showing the manner in which the various amounts have been distributed under the several principal funds. The terms of the governors do not correspond exactly with the grouping by years in this table, for the reason that an outgoing administration and legislature pass laws and make levies which bind their successors for two years.

With this distinction well in mind, it becomes a very easy matter to compare the financial record of the administrations during recent years in the matter of tax levies as shown by the table.

#### TERRITORIAL-PURPOSE FUND.

This fund more than all others combined may be taken as an index of the administration of the business and financial affairs of the Territory, because all other funds cover appropriations for one or more specific purposes, and mismanagement can be detected easily. But the Territorial-purpose fund covers all provisions for interest on the public debt; maintenance of the penitentiary; salaries and other expenses of all officials of the Territory, judges, district attorneys, and clerks of the district courts; miscellaneous funds; maintenance of the capitol; support of the National Guard, and, in fact, every appropriation made in a lump sum. Despite the fact that several new offices have been created by the legislature during the past six years, all of the demands have been met on a 6-mill levy, while the average levy in former years was  $6\frac{1}{2}$  mills, and even this levy failed to obviate a continually recurring deficiency.

#### CURRENT-DEFICIENCIES FUND.

A perusal of the second column discloses the fact that the legislature of 1897 was obliged to levy 1.25 mills for 1897 and 1898 to reap sufficient funds to wipe out deficiencies in the Territorial-purpose fund, and this, notwithstanding the issuance of \$101,800 casual deficit bonds and \$104,000 refunding bonds in 1893, still left the necessity for issuing \$123,000 certificates of indebtedness to cover deficits of the years 1893 to 1897.

#### PUBLIC INSTITUTIONS AND CHARITIES.

A glance at the table of tax levies will show that the average levy for Territorial institutions prior to 1899 was only 1.9 mills, while the



average since that year has been nearly twice as large, or 3.66 mills. Likewise, there was no levy for public charities from 1895 to 1898, but since 1899 the average levy has been 0.62 mill, and a similar condition is shown as regards provision for buildings for educational purposes, the average levy since 1899 having been 0.19 mill.

#### LEVIES TO REDEEM BONDS.

Probably the greatest contrast is that shown in the levies for sinking funds. This important feature of governmental finance was practically an unknown quantity until the legislature of 1899 began to grapple with the subject. Since that date 3.20 mills of the increased tax rate have been levied for that vital factor of public credit, the provision for redemption of outstanding bonds.

This levy, added to those for public institutions and charities, 3.66 and 0.62 mill, respectively, accounts for practically  $7\frac{1}{2}$  mills out of the total average of 14 mills for all Territorial funds.

#### EDUCATIONAL AND CHARITABLE INSTITUTIONS.

It is a fact greatly to be regretted that prior to 1899 very little interest was manifested by the legislature in the Territorial institutions for educational and charitable purposes. From examination of the various finance bills passed by the different legislatures, including that of 1897, it can be readily seen that no appropriations were made for these institutions except of the most meager kind, and a further examination of the Territorial treasurer's reports will prove that after those appropriations, such as they were, were made they were never paid except in part.

All this has been changed in recent years. The Territorial institutions are in a flourishing condition; educational institutions rank with those of a similar character in the older States, and the charitable institutions are a credit to the Territory. Appropriate and substantial buildings have been erected during the past three years, or are now in process of construction, for the institutions lately created, such as the blind asylum, reform school, miners' hospital, and the deaf and dumb asylum.

In addition to this, large sums of money have been expended in enlarging or refurnishing and equipping the normal schools at Las Vegas and Silver City, the asylum for the insane, and the penitentiary.

During the past three years 12 counties of the Territory have received from the Territorial treasurer over one-half million dollars, all derived direct from taxation.

More than \$179,000 was expended per year to maintain institutions and charities, representing  $6\frac{1}{3}$  mills of the present tax levy, as shown by the average collection of taxes during the past three years. These figures do not include \$139,000 for permanent improvements derived from the sale of public lands.

#### TERRITORIAL DEBT.

There has been prepared from official records an abstract showing all issues of Territorial bonds outstanding in 1899. The bonds have been grouped in such a manner as to show at a glance the several issues made to secure funds for permanent public improvements, as well as

those issued to cover deficits, and, finally, the reductions accomplished since 1899.

From the table it will be seen that at the time the deficits incurred between 1893 and 1899 had been funded the total debt of the Territory was almost \$1,250,000, and of that amount the enormous sum of \$678,700 represented deficiencies incurred in twelve years, or an average deficit of more than \$56,000 per year.

Since 1899 not one dollar of deficiency or bonded debt has been incurred, while the careful management of financial affairs has made it possible to provide for the payment of \$395,065 of debt, or an average of \$79,000 per year.

The record of recent years has restored to the Territory its good name with eastern investors, and the casual-deficit bonds of 1893, amounting to \$101,800, have been refunded at 4 per cent, instead of 5 per cent, as formerly, thus saving the people \$20,360 in interest during the time they have yet to run.

*Distribution of Territorial tax levy, by mills, during past nine years.*

Year.	Territorial purposes.	Current deficiencies.	Territorial institutions.	Buildings for educational purposes.	Public charities.	Public improvements.	Sinking funds to redeem bonds.	Total.
1835 .....	6.00	-----	1.75	-----	-----	-----	-----	7.75
1896 .....	6.00	-----	1.75	-----	-----	-----	-----	7.75
1897 .....	7.00	1.25	2.05	-----	-----	-----	0.50	10.80
1898 .....	7.00	1.25	2.05	-----	-----	-----	.50	10.80
Average .....	6.50	6.25	1.90	-----	-----	-----	.25	9.275
1899 .....	6.00	-----	3.10	0.55	0.55	-----	2.20	12.40
1900 .....	6.00	-----	3.10	.25	.55	-----	4.15	14.05
1901 .....	6.00	-----	3.50	.15	.59	-----	3.40	13.64
1902 .....	6.00	-----	3.50	-----	.59	0.65	3.25	13.99
1903 .....	6.00	-----	5.10	-----	.81	.60	3.00	15.51
Average .....	6.00	-----	3.66	.19	.62	.25	3.20	13.92

*Comparison of bonded debt of the Territory in 1899 and 1904.*

	Date of issue.	Amount.
<b>Bonds for legitimate purposes:</b>		
Capitol building .....	1884-85	\$200,000
Capitol contingent .....	1887	50,000
Asylum .....	1891	25,000
Penitentiary funding .....	1894-95	81,000
Territorial institutions .....	1895	35,000
Military institute .....	1895	15,000
Asylum .....	1895	30,000
Capitol rebuilding .....	{ 1895	75,000
	{ 1899	60,000
		\$571,000
<b>Bonds to pay deficiencies:</b>		
Current expense .....	1887-88	150,000
Provisional indebtedness .....	1889	200,000
Casual deficit .....	1893	101,800
Funding deficit .....	1893	104,000
Deficit of 1893 to 1899 .....	1899	123,000
		678,800
Total bonded debt in 1899 .....		1,249,800
<b>Debt reduced since 1899:</b>		
Capitol contingent .....	1887	50,000
Capitol building .....	1884	4,000
Provisional indebtedness .....	1889	10,000
Deficit of 1893 to 1899 .....	1890	122,900
Sinking funds on hand June 30, 1904 .....		208,165
		395,065
Net debt June 30, 1904 .....		854,735

The counties burdened with indebtedness—in part caused by public improvements, in part by the validation by Congress of certain bonded indebtedness which was deemed illegal, and partly by mismanagement during decades which have passed—are making an effort and are succeeding in adjusting their indebtedness and in meeting their obligations. The majority of the counties, however, have but a small bonded indebtedness and their credit is excellent. The same can be said of most of the towns and cities.

That New Mexico is prosperous is indicated by the founding of new banking institutions, the establishment of varied industries, the development of mines, the construction of irrigation systems, and an absence of business failures, which is remarkable when compared with the average of such failures elsewhere. There have been no serious labor troubles, and peace and plenty have prevailed.

Much satisfaction is felt on account of the active work of the reclamation service within the Territory. The fact that a reservoir is to be built on the Hondo, in southeastern New Mexico, and that considerable attention is being paid to the irrigation needs of the Rio Grande Valley, as well as other parts, is hailed with delight, for with irrigation will come rapid growth and development, even if only one-twentieth of New Mexico's public domain of 50,000,000 acres is brought under ditch.

In this respect there is but one regret and that is the iniquitous, unjust agitation for the building of an international dam at or near El Paso, which would deprive the people of the Rio Grande Valley above it of all further appropriation of the surplus waters, not only of the main river, but of all its tributaries. A former Attorney-General has pointed out the injustice which such a step would inflict upon citizens of the United States, and the people within this Territory are greatly discouraged by the fact that no definite assurance has been given them that they will not be robbed of their surplus waters through the claims of a foreign government, the satisfaction of which, as an Attorney-General of the United States has said, neither the comity of nations nor treaty rights demands. That there are accusations of land speculation dependent upon the building of the international dam is a matter of current report and newspaper notoriety. However, the construction of Government irrigation works on the Rio Grande and its tributaries within New Mexico will be accepted as tacit assurance that the Federal Government will deal justly and liberally with the people of the Territory.

A number of public buildings have been erected or are under construction in various parts of the Territory. The Territorial Deaf and Dumb Institute at Santa Fe has been completed. A miners' hospital is being erected at Raton and a Territorial reform school at El Rito, a Territorial orphans' school at Belen is under roof, a new dormitory is finished at the New Mexico Normal School at Silver City, a \$30,000 addition is almost completed to the New Mexico Insane Asylum at Las Vegas, a Territorial Institute for the Blind is being built at Alamogordo, the dormitory at the College of Agriculture and Mechanic Arts has been enlarged, and at other Territorial institutions new buildings have been erected or other extensive improvements have been made. Roosevelt and San Juan counties have completed substantial court-houses, and Quay, Luna, and other



counties intend to build new court-houses and county jails in the near future. Fine public school buildings, in addition to those already existing, have been erected in the larger towns and cities and even in the country districts. Santa Fe is about to erect a splendid \$30,000 schoolhouse upon the Fort Marcy addition, donated to the city by the National Government during the past year.

One of the most remarkable pieces of public work during the past year has been the construction of the so-called scenic route road over the Pecos Forest Reserve between Santa Fe and Las Vegas. Not only have about 15 miles of splendid wagon road been built, but the problem of employing convicts without entering them into competition with established industries has been successfully solved. There is perhaps no other road in the United States quite the equal of the scenic road in the magnificent scenery which it traverses in crossing the Sangre de Cristo Range at an elevation of 9,000 feet and as it descends into the picturesque and rich Upper Pecos Valley. It is hoped that Congress will extend aid in completing the road as planned, for in greater part it traverses the public domain included in the Pecos Forest Reserve.

New Mexico made a very creditable exhibit at the Louisiana Purchase Exposition at St. Louis, its building being one of the most attractive on the Plateau of States. In connection with the exposition, the board of managers has issued two illustrated volumes which review at length the characteristics, resources, industries, and other features of the Territory, which in previous years were reviewed at length by me in this report. In addition, the Territorial bureau of immigration issues pamphlets descriptive of each county and of the more important industries of this section and which will answer questions concerning New Mexico that previously were answered by this annual report.

On January 1, 1905, the new county of Torrance, near the central part of the Territory, will come into existence by legislative enactment. This will increase the number of counties to 25. Early next year the thirty-sixth legislative assembly will convene, and it is anticipated that considerable needed beneficial legislation will be enacted.

There is no doubt that the great majority of the people of New Mexico are opposed to joining New Mexico and Arizona into one Commonwealth as is proposed by pending legislation. Even the small percentage who would acquiesce in such a consolidation prefer single and separate statehood for each Territory. This is not due to any innate animosity between the two Territories, but to the inherent differences in population, in legislation, in industries, in contour, in ideals, and from an historic and ethnologic standpoint, not to mention that the consolidation of two Commonwealths like New Mexico and Arizona into one is unprecedented in American history.

The following statistics have been carefully compiled, and perhaps better than any lengthy description will give an idea of the present status and advancement of the Territory:

#### COUNTIES.

New Mexico is at present divided into 24 counties, while provision has been made for the creation of a twenty-fifth county on January 1,

1905, when Torrance County, with the county seat at Progreso, will be established out of parts of Lincoln, Valencia, Bernalillo, Santa Fe, San Miguel, and Socorro counties. The counties, their area, and their population are as follows:

Counties.	Area.	Popula- tion, cen- sus 1900.	Estimated popula- tion June 30, 1904.
	<i>Sq. miles.</i>		
Bernalillo.....	1,567	<i>a</i> 28,630	26,000
Chaves.....	9,599	<i>b</i> 4,773	10,500
Colfax.....	3,897	10,150	20,000
Dona Ana.....	3,818	<i>c</i> 10,187	13,000
Eddy.....	6,506	3,229	7,000
Grant.....	7,403	<i>d</i> 12,883	13,000
Leonard Wood.....	3,952	<i>e</i> 5,429	10,000
Lincoln.....	4,954	4,953	10,000
Luna.....	2,946	( <i>f</i> )	4,500
McKinley.....	3,377	( <i>f</i> )	7,000
Mora.....	2,542	10,304	13,500
Otero.....	6,870	4,791	8,500
Quay.....	2,805	( <i>f</i> )	4,000
Rio Arriba.....	5,810	<i>g</i> 13,777	17,000
Roosevelt.....	3,110	( <i>f</i> )	5,000
San Juan.....	5,598	4,828	7,000
Sandoval.....	3,959	( <i>f</i> )	13,000
San Miguel.....	5,001	22,053	26,000
Santa Fe.....	2,160	<i>h</i> 14,658	18,000
Sierra.....	3,081	3,158	5,000
Socorro.....	15,250	12,195	16,500
Taos.....	2,283	10,889	13,000
Union.....	6,037	<i>i</i> 4,528	7,000
Valencia.....	7,944	13,895	18,500

*a* Part of Bernalillo County taken since census of 1900 toward creation of Sandoval County.

*b* Part of Chaves County taken toward creation of Roosevelt County.

*c* Part of Dona Ana County taken toward the creation of Luna County.

*d* Part of Grant County taken toward the creation of Luna County.

*e* Part of Leonard Wood County taken toward the creation of Quay County.

*f* Created since census of 1900.

*g* Part of Rio Arriba County taken toward creation of Sandoval County. Espanola precinct of Santa Fe County annexed to Rio Arriba County.

*h* Espanola precinct annexed to Rio Arriba County.

*i* Part taken toward creation of Quay County.

#### NEW MEXICO FACTS AND FIGURES.

Area: 122,469 square miles.

Population: 293,000; census of 1900, 195,310; 1890, 153,593; 1880, 119,565; 1870, 91,874; 1860, 87,034; 1850, including Arizona and southern Colorado, 61,547, which area now has over 400,000 inhabitants. Of the present population, 150,000 came from the States or are children of parents from the States; 150,000 are of native descent; 13,000 are Indians. Of the 66,396 wage-earners in the census year of 1900, 40 per cent, or 27,214, were engaged in agricultural pursuits, 19,478 in domestic service, 10,378 in manufacturing, mining, and mechanics, 7,208 in trade, and 2,118 in professional service.

#### FARMS AND FARM PRODUCTS.

Number of farms, 1890, 4,458; in 1900, 11,834. Acres in farms in 1890, 787,882; in 1900, 5,130,878. Value of farms in 1890, \$33,543,141; in 1900, \$53,737,824. Value of farm lands, 1890, \$8,140,800; 1900, \$20,888,824. Value of farm implements, 1890, \$291,140; 1900, \$1,151,610. Value of live stock, 1890, \$25,111,201; 1900, \$31,727,400. Value of farm products, 1890, \$2,000,000; 1900, \$10,000,000. Acres in alfalfa, 1890, 12,139; 1900, 55,467. Acres under culture, 1890,

91,745; 1900, 203,893. Butter, 1890, 105,000 pounds; 1900, 381,000 pounds. Eggs, 1890, 280,000 dozen; 1900, 840,000 dozen. Hay, census of 1900, \$1,427,317. Cereals, 1900, \$979,903. Vegetables, 1900, \$278,413. Orchards, 1900, \$197,331. Other products, 1900, \$374,537. Acres under irrigation, 326,873. Improved farms, 1900, 12,311. Farms under irrigation, 9,128. Value of irrigated farms, \$13,551,592. Value of nonirrigated farms, \$3,773,177.

The above statistics do not take into consideration the lands cultivated by the Indians, the Pueblos being farmers and great producers of crops, nor of crops raised on farms of less than 3 acres, of which there are many thousand in New Mexico.

#### CLIMATE.

The weather bureau at Santa Fe reports for that point during 1903 29 cloudy days out of 365; 80 per cent of sunshine; a maximum velocity of the wind of 46 miles an hour, and an average velocity of 6.8 miles an hour; an annual mean temperature of 48.7°; a maximum temperature of 89°; a minimum temperature of 4°; a precipitation of 9.79 inches; a maximum monthly precipitation of 3.87 inches; a minimum monthly precipitation of 0.00 of an inch.

#### PUBLIC LANDS.

Subject to entry under the Federal land laws on June 30, 1904, 52,252,340 acres. Included in the four forest reserves, 5,125,000 acres. In land grants approved by Congress, 9,963,200 acres; by the Court of Private Land Claims, 1,934,986 acres. The land grants approved by Congress include 549,065 acres to the Indians. The total area appropriated is 18,820,356 acres; reserved, 7,356,104 acres.

Public land entered from June 30, 1900, to June 30, 1904, 2,728,992 acres. From June 30, 1900, to June 30, 1901, 655,739.54 acres; June 30, 1901, to June 30, 1902, 441,871 acres; June 30, 1902, to June 30, 1903, 1,082,128 acres; June 30, 1903, to June 30, 1904, 549,254 acres.

#### MINERAL PRODUCTION.

From 1860 to 1900 New Mexico produced \$17,600,000 worth of gold. In 1902 New Mexico produced: Gold, \$384,685; silver, \$148,659; copper, \$860,737; lead, \$94,936; a total of \$1,489,016. This does not include the production by individual placer miners or by prospectors not mining in a systematic manner. In addition, New Mexico produced a vast quantity of coal, iron, turquoise, gypsum, building material, and a number of other useful minerals and precious stones. The Colorado Fuel and Iron Company during 1903 hauled 138,152 long tons of iron ore out of New Mexico. The Director of the Mint reports that during 1903 New Mexico produced \$244,600 of gold and \$97,578 of silver.

#### COAL.

Area of prospected coal lands, 1,493,480 acres; amount of coal in sight, 8,813,840,000 tons, valued at \$10,000,000,000. Coal produced from June 30, 1900, to June 30, 1904, 5,304,588 tons, valued at \$7,197,061.17. Coke produced in four years, 129,897 tons, valued at



\$360,042. There were 33 coal mines working during the past year, 6 new mines were opened and 1 was abandoned. Coal produced from June 30, 1900, to June 30, 1901, 1,217,530 tons, valued at \$1,606,174; from June 30, 1901, to June 30, 1902, 1,132,944 tons, valued at \$1,609,848.90; from June 30, 1902, to June 30, 1903, 1,359,530 tons, valued at \$1,795,208.80; from June 30, 1903, to June 30, 1904, 1,594,584 tons, valued at \$2,185,779. Coke was produced as follows: From June 30, 1900, to June 30, 1901, 42,732 tons, valued at \$117,516.25; from June 30, 1901, to June 30, 1902, 25,012 tons, valued at \$58,207; from June 30, 1902, to June 30, 1903, 26,353 tons, valued at \$76,919; from June 30, 1903, to June 30, 1904, 35,800 tons, valued at \$107,400. Men employed in the coal mines, June 30, 1901, 1,870; June 30, 1902, 1,682; June 30, 1903, 2,341; June 30, 1904, 1,972.

#### POLITICAL.

Votes cast at the November election, 1900, 39,414, of which the Republicans received 21,557 and the Democrats 17,857. To the legislature were elected that year 9 Republicans and 3 Democrats in the council and 20 Republicans and 4 Democrats to the house. The vote cast in November, 1902, was 38,798, of which the Republicans received 24,222 and the Democrats 14,576, twenty counties giving Republican majorities and four Democratic. To the legislature were elected 12 Republicans and no Democrat to the council and 22 Republicans and 2 Democrats to the House. Votes cast at the November election, 1904, 43,011, of which the Republicans received 22,305; the Democrats, 17,125; the independent Republicans, 3,419, and the Socialists, 162.

#### RAILROADS.

There were 1,679 miles of railroad in New Mexico June 30, 1900; 1,981 miles on June 30, 1901; 2,263 miles on June 30, 1902; 2,446 miles on June 30, 1903; 2,483.53 miles on June 30, 1904; a total increase in three years of 841 miles.

#### STOCK.

New Mexico has 1,123,000 head of cattle, 5,674,000 head of sheep, 113,000 head of goats, 97,500 head of horses. Its wool crop in 1903 was 20,000,000 pounds. During the past fiscal year there were shipped out of the Territory 177,062 head of cattle, 12,561 horses, 28,497 hides, and 822,832 head of sheep.

#### INTERNAL REVENUE.

From June 30, 1900, to June 30, 1904, New Mexico paid \$163,547.95 in internal revenue; for the year ending June 30, 1904, \$33,172.84; for the year ending June 30, 1903, \$33,918; for the year ending June 30, 1902, \$37,847.80; for the year ending June 30, 1901, \$58,609.31.

#### INCORPORATIONS.

In the past four fiscal years 737 companies filed incorporation papers with a capitalization of \$413,884,866 with the Territorial secretary. In the fiscal year ending June 30, 1901, 149 companies incor-

porated with a capital stock of \$89,735,925; in the fiscal year ending June 30, 1902, 204 companies incorporated with a capitalization of \$119,446,500; in the year ending June 30, 1903, 200 companies incorporated with a capitalization of \$100,529,541; in the year ending June 30, 1904, 184 companies incorporated with a capital of \$104,172,900. The following incorporation fees were paid into the Territorial treasury: 1900, \$5,772.25; 1901, \$7,640.75; 1902, \$10,706; 1903, \$13,628.50.

#### ASSESSMENT.

In 1900 the Territorial assessment subject to taxation was \$36,364,-761.16; in 1901 the Territorial assessment was \$36,977,047.94; in 1902 the assessment was \$38,633,993.27; in 1903 the assessment was \$41,832,566.79 including exemptions amounting to \$2,235,615, leaving an assessment subject to taxation of \$39,596,951.79. In 1904, the assessment was \$41,735,520.53; the exemptions amounting to \$2,-438,281. The property in New Mexico is assessed at an average of only 20 per cent of its real value.

#### INDEBTEDNESS.

On June 30, 1901, the indebtedness of the Territory was \$1,180,800; on June 30, 1902, it was \$1,123,300 and the sinking fund \$89,246.26; on June 30, 1903, the indebtedness was \$1,098,300 and the indebtedness sinking fund \$134,590.03; on June 30, 1904, the indebtedness was \$1,062,000 and the sinking fund \$191,956.35. This is a reduction of \$310,756.35 in four years.

Revenue of the Territory the past three years, \$2,213,204.72, of which \$1,588,005.18 came from direct taxation; \$460,316 were collected from direct taxation during the fiscal year ending June 30, 1904; \$419,622.06 collected during the fiscal year ending June 30, 1903; \$332,328.85 collected during the fiscal year ending June 30, 1902, and \$375,738 for the fiscal year ending June 30, 1901. From other sources Territorial revenue was derived to the amount of \$690,189,541, \$142,758.22 being received during the fiscal year ending June 30, 1901, \$118,005.17 during the year ending June 30, 1902, and \$156,788.80 during the year ending June 30, 1903.

Federal appropriations for disbursement in New Mexico during the fiscal year ending June 30, 1903, \$423,070. Territorial tax rate, 1900, 14.05 mills; 1901, 14.29 mills; 1902, 13.99 mills; 1903, 15.51 mills; 1904, 14 mills.

#### INSURANCE COMPANIES.

During the four fiscal years insurance companies authorized to do business in New Mexico collected in premiums \$2,890,694.23 and paid out for losses \$985,041.44. Life insurance companies wrote in those four years policies amounting to \$10,278,034.33; fire insurance companies, \$56,233,929.83; a total of \$66,511,964.16. During the fiscal year ending June 30, 1904, there were written in New Mexico life insurance policies amounting to \$3,725,364.72, fire insurance policies to the amount of \$17,000,315.64, and premiums collected to the amount of \$892,249.36, while the year previous \$766,389.44 was collected in premiums, and the year previous to that, \$655,015.27; losses paid during the past fiscal year, \$312,625.74; the year previous, \$251,342.43, and the year previous to that, \$234,236.36.

## WELLS-FARGO EXPRESS COMPANY.

Revenue on interstate business during the fiscal year ending June 30, 1903, \$32,971.55; the year ending June 30, 1902, \$30,884.28; the year ending June 30, 1901, \$27,313.63.

## PUBLIC BUILDINGS AND GROUNDS.

The Territory maintains 15 Territorial institutions, the value of whose buildings and grounds is \$2,200,000, without the grants of land made to them by Congress. In addition, the Territory grants subsidies to 7 hospitals and an orphan asylum maintained by religious and charitable organizations. The value of the public school property of the Territory is \$824,739.95, not counting the school sections in each township. The value of the public property of counties and towns, not counting grants to towns like Santa Fe, Las Vegas, Socorro, etc., is \$515,000, making a total value of public property, not including lands, \$3,539,739.95.

## EDUCATIONAL.

School population, 1904, 68,400; 1903, 68,152; 1902, 62,864; 1901, 53,008. The school population includes all children between the ages of 5 and 21 years, and the census is taken annually.

Enrollment in the public schools, 1904, 39,704; 1903, 37,646; 1902, 35,227; 1901, 31,510; 1900, 21,761.

Average daily attendance, 1904, 29,582; 1903, 24,856; 1902, 22,573; 1901, 19,451.

Public schools, 1904, 729; 1903, 665; 1902, 603; 1901, 599.

Teachers, 1904, 852; 1903, 757; 1902, 712; 1901, 671.

Expenditures, 1904, \$353,012.22; 1903, \$287,545.02; 1902, \$324,784.91; 1901, \$202,882.53.

Receipts from all sources, 1904, \$489,308.09; 1903, \$454,342.38; 1902, \$424,365.42.

Average school term, four months; average salary paid teachers, \$56 per month; total value of all school property in the Territory, \$2,071,702.25; enrollment of pupils in all of the schools, 42,925; annual expenditures for all of the schools, \$723,048.32; total expended for the public schools the past three years, \$1,168,224.68.

## CHURCHES.

The Roman Catholic Church in New Mexico has 1 archbishop, 1 bishop, 1 vicar-general, 19 regular priests, and 45 secular priests; it has 44 churches with resident priests, 325 mission churches, 6 academies for young ladies, 1 college, 10 parochial schools, 2 boarding schools for Indians with 300 pupils, 2 day schools for Indians with 200 pupils, 2 academies for boys.

Baptist churches, 36; 1 college and a number of mission schools.

Lutheran churches, 3; 180 communicants; 90 Sunday school pupils; 7 teachers.

Methodist Episcopal, 16 English churches, valued at \$44,900; 7 parsonages, valued at \$14,025; 1,204 members. The Spanish churches, number 45, membership, 2,254; buildings, 35, valued at \$45,000; parsonages, 25, valued at \$25,000; day mission schools, 14; college, 1,



property value \$30,000; four mission boarding schools, property value \$19,000.

Presbyterian, 47 churches; number of ministers and helpers, 44; number of church members, 2,225; increase during the year, 370; Sunday school members, 1,936; amount raised for church purposes, \$18,388; mission schools, 24; teachers, 45; pupils, 1,750; expenditures of schools, \$41,048; value of school property, \$86,500.

Mormons, 4 churches, 638 members, 255 children, 6 Sunday schools, 609 pupils.

Congregational, 5 churches, 302 members, 6 mission schools, 500 pupils.

Protestant Episcopal Church, 13 congregations, 11 churches, 6 rectories, 1 parish house, 1,380 baptized members, 962 communicant members, 1,885 individuals, 60 Sunday school officers and teachers, 491 pupils; total annual contributions, \$16,554.76.

Christian Church, 12 congregations, 5 churches, 750 members, 6 Bible schools, 3 missions; value of church property, \$10,000.

Hebrew congregations, 3; synagogues, 2; members, 800.

#### NOTARIES PUBLIC.

During the year ending June 30, 1904, 223 notaries public were appointed; during the year ending June 30, 1903, 288; during the year ending June 30, 1902, 205; during the year ending June 30, 1901, 202.

#### BANKS.

On June 30, 1904, there were 21 national banks and 10 State banks; the national banks having a capital stock of \$1,204,300; resources, \$8,593,372.39; deposits, \$5,418,754.23; undivided profits, less expenses, \$194,497.48.

On June 30, 1903, there were 19 national banks and 11 State banks; June 30, 1902, 15 national banks and 11 State banks; June 30, 1901, 11 national banks and 9 State banks. Since 1900, 14 national banks have been organized. The 10 State banks have a capital stock of \$277,400; resources, \$2,071,840.59; deposits, \$1,696,246.15; surplus and profits, \$98,194.44.

#### POPULATION.

An estimate of the population of New Mexico on June 30, 1904, from registration and school census returns: Males of voting age, 73,000; females of same age, 71,000; children of school age, 68,400; foreigners, not citizens, 5,000; Indians, 13,000; children under the age of 5, 62,600; total, 293,000.

# PART I—REPORTS OF UNITED STATES OFFICIALS.

## UNITED STATES LAND OFFICES.

### SANTA FE LAND OFFICE.

[M. R. OTERO, *Register*; FRED. MULLER, *Receiver*.]

*Business transacted during the fiscal year ending June 30, 1904.*

County.	Home- steads.	Mineral lands.	Desert lands.	Land sold.	Lieu se- lections act June 4, 1897.	Territo- rial se- lections.	Total.
	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>
Bernalillo.....	800		40	80	40		960
Colfax.....	6,036			326	80		6,442
Leonard Wood.....	8,310				640		8,950
McKinley.....	400				41		441
Mora.....	12,065		1,420		40		13,555
Rio Arriba.....	1,685	188				5,874	7,747
Sandoval.....	2,076	65		160			2,301
San Juan.....	4,189		1,286	160			5,635
San Miguel.....	11,973		160		744		12,877
Santa Fe.....	3,467	89			240		3,796
Socorro.....	2,923				240		3,163
Taos.....	160	368					528
Valencia.....	4,282		480		519		5,281

Total number of acres disposed of during fiscal year, 71,676;  
amount of fees and commissions received therefrom, \$20,855.32.

*Area reserved, appropriated, and unappropriated, in Santa Fe land districts.*

County.	Area unappropriated and unreserved.			Area re- served.	Area ap- propriated.	Total area of land sur- face of the county in land dis- trict.	Brief description of character of unap- propriated and un- reserved land.
	Sur- veyed.	Unsur- veyed.	Total.				
	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	
Bernalillo.....	263,917	147,000	410,917		564,083	975,000	Mountainous, timber, and grazing.
Colfax.....	110,460	23,040	133,500		1,664,500	1,798,000	Mountainous, graz- ing, and agricul- tural.
Leonard Wood.....	1,328,922	8,950	1,337,872		606,703	1,944,575	Grazing and agricul- tural.
McKinley.....	833,164	57,252	890,416	999,516	1,366,008	3,255,940	Mountainous and grazing.
Mora.....	338,452	82,670	421,122		827,878	1,249,000	Mountainous, agricul- tural, and grazing.
Rio Arriba.....	1,525,366	728,167	2,253,533	840,161	1,165,306	4,259,000	Do.
Sandoval.....	531,796	243,680	775,476	453,817	1,076,967	2,306,260	Do.
San Juan.....	1,001,040	480,280	1,481,320	1,958,400	257,280	3,697,000	Grazing and agricul- tural.
San Miguel.....	793,668	43,102	836,770	202,550	1,291,680	2,331,000	Do.
Santa Fe.....	555,070	30,624	585,694	188,900	596,236	1,370,830	Mountainous and grazing.
Socorro.....	1,175,867	70,192	1,246,059		901,941	2,148,000	Mountainous, graz- ing, and agricul- tural.
Taos.....	318,677	301,336	620,013	119,931	730,056	1,470,000	Do.
Valencia.....	1,755,562	263,678	2,019,240	401,804	2,243,441	4,663,985	Grazing and agricul- tural.
Total.....	10,531,961	2,479,971	13,011,932	5,164,579	13,292,079	31,468,590	

## LAS CRUCES LAND OFFICE.

[NICOLAS GALLES, *Register*; H. D. BOWMAN, *Receiver*.]*Transactions at the Las Cruces land office for the fiscal year ending June 30, 1904.*

Nature of business.	Number of entries.	Total acreage.	Nature of business.	Number of entries.	Total acreage.
Homestead entries .....	236	34,631	Desert-land entries .....	23	3,000
Final mineral entries .....	11	459	Coal declaratory statements .....	32	4,901
Final homestead certificates .....	68	9,549	Lieu selections .....	42	3,108
Mineral applications .....	8	362			
Cash entries .....	29	1,052	Total .....	449	57,062

## CLAYTON LAND OFFICE.

[EDWARD W. FOX, *Register*; ALBERT W. THOMPSON, *Receiver*.]*Transactions at the Clayton land office for the fiscal year ending June 30, 1904.*

	Number.	Acres.	Commissions.	Fees.	Amount.
Excess payments on homesteads and other locations and entries .....	58	168.69			\$212.14
Original desert-land entries .....	48	6,876.64			1,709.20
Final desert-land entries .....	2	400.00			400.00
Commutated homesteads .....	34	5,790.44			7,223.67
Sales at auction .....	1	40.00			50.00
Total cash sales .....	143	13,275.77			9,595.01
Original homestead entries .....	713	112,388.04	\$4,215.10	\$7,075	11,290.10
Final homestead entries .....	199	30,449.86	1,179.42		1,179.42
Sold additional homesteads .....	1				3.00
Reservoir declaratory statements .....	1				3.00
Territorial selection .....		20,791.12			178.00
Testimony .....					554.77
Total all classes .....	1,057	176,904.79	5,394.52	7,075	22,783.30

Salaries, fees, and commissions ..... \$6,000.00  
 Incidental expenses ..... 1,582.47

Total ..... 7,582.47

*Entries in Clayton land district, classified.*

County.	Home- stead entries.	Act June 4, 1897, lieu selections.	Desert- land entries.	Act Jan- uary 21, 1898, Terri- torial se- lections.
	Acres.	Acres.	Acres.	Acres.
Colfax County .....	20,680	2,641	160	
Union County .....	22,960	2,398	3,040	2,680
San Miguel County .....	3,360	3,360		
Quay County .....	19,080	240		43,240
Roosevelt County .....	15,600	160	3,680	27,857
Mora County .....	5,120	160	1,840	
Leonard Wood County .....	3,360	80		26,630
Total .....	90,160	9,039	8,720	100,407



## ROSWELL LAND DISTRICT.

[HOWARD LELAND, Register; D. L. GUYER, Receiver.]

*Business transacted during the fiscal year ending June 30, 1904.*

County.	Area unappropriated and unreserved.			Area reserved.	Area appropriated.	Total area of land surface of the county in land district.	Brief description of character of unappropriated and unreserved land.
	Surveyed.	Unsurveyed.	Total.				
	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	
Chaves .....	3,241,427	2,016,673	5,258,100	7,223	1,008,277	6,273,600	Grazing rolling prairie.
Eddy .....	1,606,281	2,229,701	3,835,982	6,300	477,709	4,319,991	Mostly prairie; some timber in mountains.
Leonard Wood ..	50,432		50,432		3,840	54,272	Undulating grazing prairie.
Lincoln .....	1,998,374	110,670	2,109,044	563,620	503,336	3,176,000	Grazing land; timber in mountains.
Otero .....	45,244	1,377,549	1,422,793	208,440	20,767	1,652,000	Do.
Roosevelt .....	772,795	76,320	849,115	118,860	287,425	1,255,400	Prairie grazing land.
Valencia .....	102,938		102,938		9,000	111,938	Do.
Total .....	7,817,491	5,810,913	13,628,404	904,443	2,310,354	16,843,201	

## INTERNAL REVENUE SERVICE.

[A. L. MORRISON, Sr., Collector.]

The internal-revenue collections for New Mexico for the year ending June 30, 1904, were as follows:

Special-tax stamps .....	\$20,465.97
List covers collection of penalties and compromises for violation of law .....	1,078.33
Documentary stamps .....	24.45
Tax-paid stamps .....	1,907.73
Beer stamps .....	6,955.00
Tobacco stamps .....	312.66
Cigar stamps .....	2,428.70
Total .....	33,172.84

## THE UNITED STATES SURVEYOR-GENERAL FOR NEW MEXICO.

[MORGAN O. LLEWELLYN, Surveyor-General.]

The report for the fiscal year ending June 30, 1904, is as follows:

A.—Statement showing contracts for the survey of public lands, awarded during the fiscal year ending June 30, 1904.

B.—Contracts awarded for the resurvey and allotment of Indian reservations for the fiscal year ending June 30, 1904.

C.—Surveys returned during the fiscal year ending June 30, 1904.

During the year the following letters, documents, plats, field notes, and other papers have been prepared, briefed, and recorded, viz:

Letters to the Commissioner of the General Land Office .....	300
Miscellaneous letters sent .....	1,215
Official letters received and recorded .....	258

Transcripts of field notes:

Grant .....	pages ..	464
Township .....	do .....	1,112
Mineral .....	do .....	836
Mineral monuments .....	do .....	15
Reports on mining claims .....	do .....	82

## Transcripts of field notes—Continued.

Deputies in field .....	pages.....	788
Small holding claims .....	do.....	479
For examiner .....	do.....	36
Total .....		3, 812
Township plats .....		65
Amended township plats .....		24
Amended township plats showing segregated mineral claims .....		16
Exterior township plats .....		16
Enlarged small-holding plats .....		33
Mining-district plats .....		11
Mineral monument plats .....		8
Grant plats .....		11
Mineral plats .....		134
Diagram plats for General Land Office .....		17
Outline plats or tracings for deputies .....		14
Diagrams to accompany contracts, special instructions, and examinations .....		30
Mining claims copied for use of deputies .....		3
Recitals and descriptive notes for grant patents .....	pages.....	250
Notices for publication, survey of private land claims, in duplicate, pages .....		6
Translations .....	pages.....	221
Copies of certified copies of location notices for mineral surveys .....		504
Descriptive lists for land office .....	pages.....	84
Annual report, estimates, etc., in triplicate .....	do.....	48
Semiannual property return, in duplicate .....	do.....	27
Accounts current, in duplicate .....		32
Abstracts, in triplicate .....		48
Vouchers, in duplicate .....		84
Contracts and bonds .....		7
Special instructions—public lands, grants, and small-holding claims .....		9
Number of typewritten pages contained in said special instructions .....		110
Official orders for mineral surveys (131 claims) .....		44
Tracings to accompany contracts .....		21
Tracings for examiners .....		19
Tracings, miscellaneous .....		10
Books of field notes examined and corrected .....		160
Books of field notes lettered .....		48
Placards and labels lettered .....		15
Letter books lettered .....		4
Deputy surveyors' commissions lettered .....		1
Recording mining claims in mining docket .....		109
Protracting mining claims on mining-district plats .....		103
Docketing and filing papers in grant cases .....		37
Latitude and departure tables made and checked .....		257
Clerk's certificates and orders of the Court of Private Land Claims lettered on grant plats .....		8
Miscellaneous blue prints made and mounted .....		64
Miscellaneous plats mounted .....		118
Large map of New Mexico (6 miles to the inch) .....		1
Plats amended and corrected .....		30
Miscellaneous papers copied, compared, etc .....		601

*Mileage of surveys transmitted to the Commissioner of the General Land Office during fiscal year ending June 30, 1904.*

Character of work.	Measurements.		
	Miles.	chs.	lks.
Standard lines .....	41	24	12
Township and range lines .....	309	72	70
Subdivisional lines .....	914	22	27
Grant lines .....	199	21	27
Meander lines .....	35	51	30
Small-holding claim lines .....	194	52	88
Connecting lines .....	170	28	14
Total .....	1,865	32	68

*Tracings and descriptive lists furnished to district land offices during fiscal year ending June 30, 1904.*

Character of work.	Land offices.				
	Santa Fe.	Las Cruces.	Roswell.	Clayton.	Total.
Township plats.....	8	1	2	-----	11
Fractional township plats.....	7	5	1	-----	13
Mining plats.....	18	12	3	-----	33
Small-holding plats.....	10	12	-----	-----	22
Descriptive lists, sheets.....	35	12	6	-----	53
Plats showing lots made fractional by mining claims.....	2	12	1	-----	15
Total.....	80	54	13	-----	147

#### *Mineral surveys.*

Mineral claims surveyed during fiscal year ending June 30, 1904.....	95
Surveys ordered, returns not filed.....	36
United States mineral monuments established.....	3
Total .....	134

During the year there has been deposited on account of surveys of mining claims the sum of \$3,760, and applications were made for the survey of 131 mining claims.

#### SMALL-HOLDING CLAIMS.

There have been 4,489 small-holding claims filed in this office under the provisions of sections 16 and 17 of the act of March 3, 1891, as amended, for tracts of land not exceeding 160 acres each.

Contracts have been awarded for the survey of some 1,600 small-holding claims. Said filings cover, in a majority of instances, from 2 to 6 tracts, and a conservative estimate of the number of tracts embraced in these small-holding applications still to be surveyed is 8,900. Where such tracts are embraced in townships to be surveyed the surveys of such small-holding claims situate therein are executed at the time of extending the lines of public survey over such townships, and where they are situate in townships heretofore surveyed, per diem contracts for such surveys are awarded. The time limit within which such small-holding filings could be filed in this office expired with March 3, 1901.

The platting of these small-holding claims is very complicated, and aside from showing the same on the township plats, small-holding plats on an enlarged scale are made in triplicate, showing sometimes only one or two sections, which often necessitates the making of 27 to 30 small-holding plats for one township. When small-holding claims are situate in townships to be surveyed the subdivisinal rate of mileage only is allowable to the deputies for establishing the boundaries of such claims and connecting the same to corners of public surveys.

These small-holding tracts entail a vast amount of labor in the hauling of stone for monuments, setting and marking corners for all angles of such irregular tracts, and payment is allowed for one boundary only if the same is a common boundary with an adjoining small-holding claim, surveyed by the same deputy; and by reason of having



to write the field notes complete for each tract, setting and marking the corners for same, and connecting two corners thereof to a corner of the public survey, the deputies complain that they can not make living wages at the low rates of mileage now paid, and are loath to accept contracts for this class of work. The law in this case should be changed to allow the awarding of contracts for all small-holding surveys at per diem rates, whether the same be in townships heretofore surveyed, or in townships to be surveyed, and this embarrassment removed. Payment for the execution of small-holding surveys is made from the appropriation for the survey and resurvey of public lands, and for that reason the amount of the appropriation to be apportioned to the Territory of New Mexico should be increased.

## PRIVATE LAND CLAIMS.

All private land claims confirmed by the United States Court of Private Land Claims have been surveyed and approved. Contracts for the survey of 3 private land claims confirmed by Congress are pending, and will be completed during the fiscal year ending June 30, 1905.

## CONCLUSION.

The sum of \$10,000 was apportioned to New Mexico for public surveys during the fiscal year ending June 30, 1904, and contracts for surveys to that amount were awarded.

The clerical work of this office is up to date, and field notes filed are taken up to be examined, platted, etc., immediately upon receipt.

EXHIBIT A.—*Statement of contracts awarded under appropriation for the survey of public lands for the fiscal year ending June 30, 1904.*

No.	Date.	Surveyor.	Liability.	Description.
367	Dec. 12, 1903	George Lynch .....	\$1,260.00	Survey of all valid small-holding claims located in T. 2 S., R. 1 W.
368	Dec. 15, 1903	H. S. Du Val .....	300.00	Subdivisional lines of fractional T. 8 N., R. 2 E.
(a)	Jan. 14, 1904	.....do .....	20.00	Meanders of the Rio Grande through fractional T. 8 N., R. 2 E.
369	Dec. 24, 1903	Clarence Goddard...	4,080.00	Exterior and subdivisional lines and small-holding claims of Tps. 14 S., R. 16 W.; and 22 and 23 S., R. 21 W.
370	Jan. 18, 1904	H. S. Du Val .....	1,650.00	Exterior and subdivisional lines and small-holding claims of Tps. 17 and 18 N., R. 28 E., 1 S., R. 1 W., and 21 N., R. 22 E.
371	Jan. 22, 1904	B. A. Nymyer .....	600.00	Exterior and subdivisional lines and small-holding claims of T. 19 S., R. 37 E.
372	Apr. 15, 1904	Duane Wheeler .....	2,090.00	Exterior and subdivisional lines and small-holding claims of Tps. 5, 6, and 7 E., R. 8 E. and 4 N., R. 9 E.

<sup>a</sup>Special instructions.

EXHIBIT B.—*Statement of contracts awarded under the appropriation for the survey and allotment of Indian reservations for the fiscal year ending June 30, 1904.*

No.	Date.	Surveyor.	Liability.	Description.
374	June 9, 1904	W. W. Jones .....	\$500.00	Resurvey of the west boundary of the Zuñi Indian Reservation.

**EXHIBIT C.—Statement showing surveys returns for which have been filed during fiscal year ending June 30, 1904.**

No.	Date.	Surveyor.	Liability.	Description.
330	Apr. 12, 1902	John H. Walker .....	\$3,000.00	A portion of the exterior and subdivisinal lines of fractional T. 12 N., R. 5 E., together with small-holding claims located therein. Part of returns under this contract reported in previous annual report.
358	Apr. 3, 1902	.....do .....	4,000.00	Exterior and subdivisinal lines of fractional T. 22 N., R. 14 E., and establishment of a part of the south and west boundaries of the Mora grant. Remainder of returns reported under last annual report.
359	Apr. 4, 1902	Jay Turley .....	3,900.00	Exterior and subdivisinal lines and small-holding claims of Tps. 16 and 17 S., R. 11 E.; 3 N., R. 10 E.; and 19 N., R. 10 E. Balance of returns reported under last annual report.
(a)	Oct. 9, 1902	John H. Walker .....	100.00	Fractional township line between Tps. 11 and 12 N., R. 5 E.
362	Nov. 5, 1902	Wendell V. Hall .....	1,636.50	Exterior boundary and connecting lines of the Santa Teresa, San Miguel del Bado, and Refugio Colony grants.
363	Dec. 3, 1902	John H. Walker .....	2,610.32	Exterior and subdivisinal lines and small-holding claims of T. 14 N., R. 1 W.; 15 N., R. 2 W.; 10 N., R. 21 E.; 14 N., Rs. 16 E. and 17 E.; and 23 N., R. 17 E. Remainder of returns not yet filed.
364	.....do .....	Wendell V. Hall .....	1,701.43	Exterior and subdivisinal lines and small-holding claims of T. 5 N., R. 7 E.; T. 5 N., R. 9 E.; and T. 6 N., R. 6 E.
368	Dec. 15, 1903	H. S. Du Val .....	300.00	Subdivisinal lines of fractional T. 8 N., R. 2 E.
(a)	Jan. 13, 1904	.....do .....	20.00	Meanders of the Rio Grande through T. 8 N., R. 2 E.
361	Aug. 20, 1902	Joseph F. Thomas ...	3,163.25	Subdivisinal lines of T. 26 N., R. 8 E.; exterior and subdivisinal lines and small-holding claims of T. 28 N., R. 8 E.; exterior and subdivisinal lines and small-holding claims of T. 28 N., R. 9 E. Remainder of returns not yet filed.

<sup>a</sup>Special instructions.

**ABSTRACT OF THE ANNUAL REPORT OF THE MINE INSPECTOR FOR THE TERRITORY OF NEW MEXICO.**

[JO E. SHERIDAN, *Inspector.*]

**PRESENT CONDITIONS AND FUTURE PROSPECTS OF THE COAL-MINING INDUSTRY IN NEW MEXICO.**

The coal-mining industry in New Mexico is now and will continue for centuries hence to be one of the most important and stable industries of the Territory. While there is no indication of a boom in the coal-mining business, yet each succeeding year exhibits a healthy progress. During the fiscal year ending June 30, 1903, there was an increase of production over the preceding year amounting to 19.99 per cent, and during the fiscal year ending June 30, 1904, the increase of production over the preceding fiscal year was 20.18 per cent.

The coal-mining industry in New Mexico is assuming a prominent place among the most profitable resources of the Territory. As predicted in the last annual report of the United States mine inspector, the production of coal has increased largely during the past fiscal year, and the demand has exceeded the supply, notwithstanding the fact that the railroads of the West and Southwest, which are among the largest consumers, have substituted oil, from the wells of California and Texas, for fuel upon 2,000 miles of railroad.

In McKinley County the producing capacity of the mines is far in excess of the demand. It is in this county that the competition of fuel oil is most felt. The cheap fuel oil of California has been substituted for coal upon the Santa Fe Pacific Railroad from San Francisco, Cal., to Seligman, Ariz., a length of 770 miles of road, and also upon the branch from Los Angeles to Barstow, Cal., 141 miles, and upon other coast lines where New Mexico coal was used, and oil is also used in many industries and for domestic purposes in many localities of California where coal was formerly used. And yet, with this formidable competitor in the field of consumers, the production of coal from McKinley County shows a very slight decrease; and had transportation facilities been available during the winter months to supply the California markets, the production of McKinley County would have shown a gain for the past fiscal year. This indicates that the settlement of the Territories of Arizona and New Mexico and development of their resources has created a demand which at present compensates for the lost markets to the railroads and in California, and which will in the near future furnish a home market for a large proportion of New Mexico's coal production. The development of the vast mining resources of Arizona and Old Mexico are largely dependent upon the cheap coal of New Mexico.

During the past year important improvements have been completed at the great centers of coal production—Dawson and at the Willow mines, both in Colfax County. The installation of powerful machinery, the construction of hundreds of houses for employees, and the extensive development of the coal field; all this has put these camps in condition to produce millions of tons of coal when the demand warrants it. At the Weaver camp in McKinley County similar improvements have been made in anticipation of an increased consumption of coal. Nor is this anticipation of greater demand without sufficient ground. For several years past the oil has been substituted for New Mexico coal in the markets tributary to these coal fields. Fuel oil has been substituted for coal in Texas, New Mexico, and Arizona, territory tributary to the El Paso, Tex., coal market, curtailing the demand by fully 20,000 tons per month, which means an equal diminution of production from the Colfax County coal mines. The substitution of fuel oil for coal in California and on west coast and transcontinental railroads has had a similar effect on the McKinley County coal fields and to about the same extent.

Thus the demand for New Mexico coal has been lessened to the amount of 480,000 tons per annum. But within the past year the flow of oil in the wells of both sections named has decreased to such a degree that the price per barrel has increased from 100 to 200 per cent; this increase in price allowing of successful competition of coal from New Mexico for use as fuel. Continued development of the resources of California and the Pacific coast States, as well as New Mexico, Arizona, and Old Mexico, will insure an increased demand and permanent market for New Mexico coal on a scale of greater magnitude than most people foresee. Nor can the influence of the Panama Canal, when completed, be overlooked. Through the harbors of California vast tonnage will be transported via the canal; and the New Mexico fields will furnish the nearest available coal supply for the vessels engaged in this traffic.



Favored by location, near the markets of Old Mexico, Texas, Arizona, and California, as well as the local demand, in all of which markets New Mexico coal is protected from competitors by reason of distance of other mines from these markets, New Mexico is thus assured of a good market for its great coal resources.

For extent in area, thickness of coal seams, good roof and floor, absence of gas, freedom from creep, squeeze, and heaving bottom, absence of water, which, if present, would necessitate powerful pumps—in fact, for all favorable conditions which go to make up a desirable coal-producing field, New Mexico is far ahead of any State or Territory in America, and consequently the coal fields can be more profitably operated.

#### DESCRIPTION OF NEW MEXICO COAL FIELDS.

The extent of the area underlaid by coal in the Territory of New Mexico can not be fully estimated until a geological survey is made. New localities are attracting notice each year as it is demonstrated by development that profitable coal fields exist therein.

Within the past two years there has been added to the known coal areas of New Mexico, by development, about 550 square miles. One of the fields is in Santa Fe County, and comprises the Una del Gato mines, now opened to a depth of over 700 feet, and showing three workable coal seams of a good quality of coal, the veins being from  $3\frac{1}{2}$  to  $4\frac{1}{2}$  feet in thickness. In this field are also found the Coyote mines and the Pinavititos extensions of the Una del Gato mines to the northwest, the outcrop showing for a distance of 5 miles or more. About 10,000 acres of the coal lands in this field has been filed upon, and a large part of it purchased from the Government.

In Tps. 18 and 19 W., Rs. 4 and 5 N., in the southwestern portion of Valencia County and northwestern section of Socorro County, a large area has been proven to contain good workable seams of coal 4 to 5 feet in thickness. About 20,000 acres of the coal lands in this field have been filed upon.

Since the expiration of the fiscal year for which this report is written two strong companies of capitalists have become interested in the Carthage coal field in Socorro County, and more than 5,000 acres of coal lands have been filed upon in that field. Two or three railroads from the coal mines at Carthage, to connect with the Atchison, Topeka and Santa Fe Railroad at San Antonio, N. Mex., have been projected, and one of these lines has graded 7 miles of track and laid 2 miles of rail, and will probably be completed ere this report is in print. Everything in connection with these Carthage mines indicates a very great increase of proven coal area and increased production during the ensuing fiscal year.

In Rio Arriba County several thousand acres have been filed upon during the past year.

On the line of Bernalillo and Valencia counties, on the Antonio Sedillo grant, a considerable area is underlain by coal.

With new coal fields of such great extent being developed each year it is evident that it will require many years before the full extent of the coal areas of New Mexico becomes definitely known, unless the United States Government shall have a geological survey made.

Hereinbelow will be found a brief description of the Coal Measures in the various counties of the Territory.

The McKinley and San Juan counties' coal fields comprise an area extending from the Zuni Buttes on the south to La Plata on the Colorado line, 125 miles in a straight line. In width it will average 10 miles, giving a total area of 1,250 square miles, or 800,000 acres. This area is underlain by several coal seams of good workable thickness, ranging from  $3\frac{1}{2}$  to 40 feet.

In the Gallup coal field, McKinley County, there are two series of coal seams, known as the "Upper and Lower Coal Measures." These Coal Measures are separated by about 400 feet of sandstone, slates, shale, and clays.

In the Upper Coal Measures 6 coal veins have been exploited, and 5 of these proven to be valuable producing seams. Commencing with No. 1 vein, which outcrops near the Gallup and Weaver mines, the coal seam is found with varying depth of cover as due to the accidents of erosion. This vein is 6 feet in thickness, but mixed with bands of shale and bone, rendering it of little value in the immediate locality where exposed.

Passing down through 21 feet 5 inches of sandstone, fire clay, and shale, we encounter No. 2 vein.

This vein is from 3 to 5 feet in thickness, is clean coal, and has a good sandstone top. Between this vein and the next below is 36 feet of sandstone, fire clay, and shale.

This seam, known as "No. 3 vein," is never less than 4 feet in thickness, and frequently attains a thickness of 6 feet. The coal of this seam is of good clean character, free from bone, and with a good sandstone roof and floor. This floor of hard sandstone is 6 feet in thickness and below it lies No.  $3\frac{1}{2}$  vein. This vein is from 5 to 9 feet in thickness. In the Weaver mine this vein has been worked extensively, and has a good sandstone roof and floor.

Sixteen feet of sandstone intervenes between No.  $3\frac{1}{2}$  seam and No. 4 vein below. No. 4 vein has a thickness of 3 to 5 feet of coal, of good clean quality, and has a good sandstone roof.

Below No. 4 vein 21 feet of sandstone, shale, and fire clay is passed through, when No. 5 vein, the bottom coal seam of the Upper Coal Measures of the Gallup district, is found.

This vein where opened in the workings of the Gallup mine is never less than 5 feet in thickness, and in many places in the mine reaches 7 to 8 feet in thickness.

The Clark Coal Company's mine is also located upon these Upper Coal Measures, but only one of the coal seams has thus far been explored in this mine.

Between the Upper and Lower Coal Measures of the Gallup district there occurs about 400 feet of sandstones and fire clays, with a few small seams of coal.

The first or top vein of the lower series is known as the "Crown Point vein." This vein is from  $2\frac{1}{2}$  to 6 feet in thickness, and has been developed in several different mines, embracing several miles of area. It has been worked in the Crown Point mine, the Thatcher, Otero, and Catalpa mines. The coal is a good quality and is clean.

The Thatcher, or No. 2 vein of the Lower Measures, lies next below the Crown Point vein and at varying distances from the vein above. In one part of the Catalpa mine the Crown Point and Thatcher coal



veins lie close one upon top of the other, so that the parting can scarcely be distinguished. Six or seven miles to the north in the Thatcher and Otero mines the same coal seams are about 35 feet apart. The Thatcher coal seam is from  $4\frac{1}{2}$  to 6 feet thick, and a good quality of coal. It has been worked in several mines of the district.

The Black Diamond, or No. 3 vein of the Lower Coal Measures, lies about 40 feet below the Thatcher seam. It was worked extensively in the Black Diamond and Sunshine slopes, and is worked in parts of the Thatcher. This vein is from 5 to 7 feet in thickness and produces an excellent quality of coal.

The Otero, or No. 4, vein of the Lower Measures is found at a depth of about 35 feet below the Black Diamond coal seam. It has been extensively worked in the slopes of the Otero and the Rocky Cliff mines. It is from 3 to 6 feet in thickness and furnishes a good grade of coal.

The Gallup and Weaver mines and the Clark Coal Company's mine are opened in the Upper Coal Measures, and all of the workable seams of both the Upper and Lower Coal Measures will be found in the areas controlled by these properties, but it will be centuries hence ere the vast reserves of coal in the Upper Measures will be exhausted, and it will become necessary to tap the Lower Coal Measures in these mines.

There is considerable difference of opinion among local coal operators as to the identification of the several coal seams of the Lower Measures as found in the different mines, but from all the data obtainable the foregoing is probably a close approximate to the relative positions of the various coal seams.

Of course it must be taken into consideration that the coal seams as found in the one mine may be of contemporaneous origin with the coal seam that is called by the same name in another mine, and yet it may not be continuous between these mines, but may be segregated bodies of coal of identical age and origin.

It must be remembered that the basins or swamps in which these vast bodies of carbonaceous material were deposited, while on a scale of greater magnitude than the swamps of to-day, yet they were subject to like conditions of higher and lower localities within the whole basin, whereby the deposits were made on the lower ground or basins, and yet there was sufficient high ground to cut these several depressions off from each other and thus segregate the different portions of what would have been one vast and continuous coal seam. This, together with such rolls and faults as are incident to the movements which have occurred in the earth's crust, would render positive identification of the several coal seams quite difficult in openings considerable distances apart in the different mines except by an expert geologist, who might be able to determine their relationship by some fossil or fossils peculiar to that seam alone and belonging in no other coal seam.

Hereinabove has been described the existence and demonstration by development and production of eight workable seams of coal of the most economical thickness for production of cheap coal, as seams having a thickness of 5 to  $6\frac{1}{2}$  feet have been proven to be the most profitable to operate.

Still below these at least one coal seam has been shown by diamond-drill boring to have a thickness of 5 feet. Borings show 17 seams in



all the Upper and Lower Coal Measures, 9 of which are proven to be above  $3\frac{1}{2}$  feet in thickness and some reaching a thickness of 7 to 8 feet. When the market demands the product, all 9 of the coal seams mentioned can undoubtedly be profitably worked. In fact, 8 of them are now or were recently being operated as the demand required, and it is highly probable that some of the remaining 8 coal seams in this field will prove to be of workable thickness. But basing our estimates upon only one workable coal seam of an average of 5 feet in thickness and assuming that the other veins will offset the area to be deducted for eroded canyons, faulted and broken ground, calculating 100 tons per acre for each inch in thickness of the vein, or 6,000 tons per acre, the number of tons of coal in this field would be 4,800,000,000.

The Colfax County coal field embraces an area commencing in T. 28 N., R. 19 E., and running thence northeast to T. 31 N., R. 26 E., a total length of about 45 miles, with an average width of 12 miles, or an area of 540 square miles, 345,600 acres. There are several coal seams in this field, two of which have been exploited and show an average thickness of 6 feet each. Basing the estimate of coal in the field upon one vein only and offsetting the other by faults, rolls, and erosions which may be encountered in the other seam, calculating 100 tons per acre for each inch in thickness of one of these veins, we have as a result, for one vein of 72 inches covering the acreage above stated, a total of 2,488,320,000 tons.

Colfax County holds first place among the coal-producing counties of New Mexico. The increase of production in this county during the past fiscal year was 49.6 per cent, the mines of this county having produced 821,267 tons net during the fiscal year, against 548,052 tons during the preceding year.

The mines of this county are supplied with better transportation facilities than those in other counties of the Territory, there being two competing railroads into this section of New Mexico.

The Santa Fe County coal field is much disturbed, broken, and faulted by volcanic uplifts and overflows and igneous intrusions. Hence it is difficult to make even a close approximation of the workable area in this field. Commencing near the northern base of the Sandia Mountains, in Bernalillo County, running thence north about  $20^{\circ}$  east, passing through disturbed and broken country, with segregated patches of coal lands for a distance of 25 miles, we reach the more compact, yet somewhat disturbed, section where are located the mines of Madrid and Waldo, generally known as the Cerrillos mines. Within this area are included the coal fields of Sandoval County.

Along this course, as well as at Madrid and vicinity, are found isolated areas of an excellent quality of anthracite coal, much of it equal to the best Pennsylvania anthracite. These are sometimes of considerable extent, as at Madrid, where the Lucas mine, now known as the "Cerrillos Anthracite," has been producing steadily for fifteen years, the product of this mine during the past fiscal year being 35,621 tons. At a depth of 2,600 feet in the slope the near approach of the igneous sheet, together with the action of the thermal waters, rendered the coal worthless; but a half mile farther east a drill hole has discovered what is in all probability a continuation of the same anthracite seam, the coal being of excellent quality and a thickness of

50 inches. The topography of this immediate vicinity would indicate that there is here an area of 2 miles square of unbroken and undisturbed ground in which would be found a valuable body of anthracite, containing in all probability at least 1,000,000 tons. As the anthraciting of this coal is due to the near approach of the intrusive igneous sheet, and as the course of the intrusive is relatively erratic as to the distance maintained from the coal seam, the metamorphism has occurred in segregated sections, as the lava sheet intruded more closely to the coal seam. A reasonable calculation of the aggregate tonnage of anthracite coal which can be profitably mined from these sections would be 4,000,000 tons. Continuing our course—from the present center of operation of these measures—we find the field interrupted for a distance of about 15 miles by the uplift of the Glorieta Range of mountains.

In T. 16 N., R. 12 E., the coal is again found, extending through an area of 15 miles in length and 6 miles in width, but considerably broken.

Estimating the distance from the north end of the Sandia Mountains, in Bernalillo County, thence across Santa Fe County in a northeasterly direction to Porvenir, in San Miguel County, we have a total length of 50 miles, from which, deducting the interruption of the Glorieta Mountain Range, there remains 35 miles in length by 4 miles in width, or 140 square miles. Allowing for the uncertain and broken condition 70 per cent of this territory as unavailable for profitable mining, there is yet 42 square miles of available coal lands. There are several coal seams underlying the major part of this area. At least two of these veins are of sufficient thickness to be profitably operated, having a thickness of from 3 to  $4\frac{1}{2}$  feet, with an average thickness of about 40 inches each. Again, basing the estimate upon only 1 vein of 40 inches, the amount of available coal underlying this 42 square miles, or 26,880 acres, at 4,000 tons per acre equals 107,520,000 tons. In such broken ground a positive and definite determination as to quantity can not be made, but it is certain that the above approximation is conservative. During the past six years over 1,000,000 tons have been produced from an area one-half mile square of this field, at Madrid, and from only one of the coal seams, the other being untouched.

The topography and geological features of the Coal Measures of Lincoln County are of such character that the boundaries of the field are difficult to define. The country is broken and faulted, cut by igneous dikes, and in places the coal altered by action of lava sheets, while the area is quite extensive in which coal is known to lie, yet the ground is so very badly broken and disturbed that much of it can not be profitably mined until prices are much higher and coal more scarce in other fields. It is uncertain, at best—any estimate which can be made of the available coal in these measures—but it may be placed at 5,000,000 tons so far as exploited. Borings may discover greater quantity, but a larger estimate at present would be unreliable.

The coal fields of Rio Arriba County embrace an area commencing at Azotea, a station on the Denver and Rio Grande Railroad, on the east, and extending west along the Colorado line to the San Juan River, which forms the northern portion of the western boundary line of the county, a distance of 40 miles in length by an average



width of at least 12 miles south of the Colorado line. It is far more than probable that these Coal Measures extend more than 12 miles to the south in many places. From a casual inspection of the formation it appears that these coal fields might be classed as an eastern division of the San Juan County Coal Measures, and are probably of contemporaneous origin.

There are three coal seams in these fields which are, respectively, 48 inches, 40 inches, and 36 inches in thickness. The 48-inch vein and the 40-inch vein have been worked to a depth of 1,200 feet and 600 feet on slope, respectively. Operation of the thicker seam was suspended because creeping of the floor rendered it expensive to keep entries open. Only the 40-inch seam is now worked. Computing the total area at 400 square miles, allowing one-fourth of area for interruption of formation by uplifts or dikes, there would be 300 square miles, or 192,000 acres. Basing calculation upon the one seam now operated, 40 inches in thickness, or 4,000 tons per acre, would show an available body of 768,000,000 tons.

Socorro County has heretofore only been credited with a coal-bearing area of 1,000 acres, but a very much larger area of coal land has been developed in southern Valencia County and northern Socorro County.

This area is estimated at 20 miles in length by 10 miles in width, or 200 square miles, about half in each of the counties named. The thickness of the coal seam developed runs from 48 to 66 inches.

At Carthage, near San Antonio station, on the Atchison, Topeka and Santa Fe Railroad, there are four producing mines in operation. The area of this field as far as developed is about 1,000 acres; thickness of seam, 50 inches; quantity of coal that can be mined, 5,000,000 tons. Add to this the field above mentioned, adjoining Valencia County, amounting to 100 square miles, or 64,000 acres, with an average thickness of one coal seam of 50 inches, or 5,000 tons per acre, which would give 320,000,000 tons, together with the Carthage field of 5,000,000 tons. As in the other fields adjacent to the Socorro-Valencia County fields it is far more than probable that there are several workable coal seams in this area.

On top of the Caballo Mountain range, a few miles west of Engle station, in Socorro County, are some patches of coal, but of little or no value, except as an indication that coal may underlie the extensive valley at the eastern base of the mountains. The coal here found is probably a continuation of the Carthage coal seams, and other parcels of coal land of valuable dimensions may be found in the intervening space.

Near Engle station and upon the Salado Creek are found isolated patches of coal, but thus far no producing mines have been developed.

For many years it has been current rumor throughout New Mexico that there were valuable coal fields in Valencia County, but it was only recently that the value of these coal lands has been demonstrated. From reliable information obtained there are 100 square miles of valuable coal lands, being a part of the coal field and similar in every respect to that described above as extending south into Socorro County. This would give Valencia County an available supply of 320,000,000 tons. There are said to be other valuable coal areas as yet untouched in Valencia County. Many thousands of



these acres of this land have been filed upon as coal lands at the United States land office during the past year.

*Summary of coal areas of New Mexico and available tonnage of coal which can be profitably mined.*

Field.	Area.	Thick- ness of coal seam.	Tonnage available.
	<i>Acres.</i>	<i>Inches.</i>	
McKinley and San Juan counties .....	800,000	60	4,800,000,000
Colfax County .....	345,600	72	2,488,320,000
Santa Fe County .....	26,880	40	107,520,000
Lincoln County .....			5,000,000
Rio Arriba County .....	192,000	40	768,000,000
Socorro County .....	65,000	50	325,000,000
Valencia County .....	64,000	50	320,000,000
Total .....	1,493,480		8,813,840,000

In addition to the coal fields above named, there are several isolated areas of coal lands, but of undetermined extent.

In the vicinity of the village of Cebolleta and Chavez Mesa, in Valencia County, there are two workable seams of coal, one 4 feet and the other 5 feet in thickness.

Thousands of acres of coal lands have been located along the boundaries of Santa Fe and Bernalillo counties, and much of it entered at the land office at Santa Fe, but this is probably the area already credited to the Santa Fe County field.

There is a reported discovery of coal about 30 miles from Las Cruces, in Dona Ana County, near the Otero County line.

The Coal Measures of New Mexico occur in the Laramie Cretaceous sandstones, in many places uplifted and broken igneous dikes, intrusive sheets, and by the disturbing influences of the more recent eruptive action of volcanoes, which has covered the Coal Measures with extrusive sheets of lava, as on the Johnson and Barela mesas, in Colfax County. But the larger proportion of the coal areas of New Mexico are comparatively undisturbed, and have every condition favorable to profitable coal mining.

As shown herein above, present development would certainly indicate a total area of 1,493,480 acres of coal lands in New Mexico, with a total available tonnage of 8,813,840,000 tons. Situated as these vast coal reserves are, near the median line between the diversified industries of the east and west coasts, it is quite apparent that they will soon play an important part in the commercial economics of the nation.

The industries of both coasts will be dependent upon New Mexico coal supplies for cheap transportation, which is necessary to the interchange of products between these aforementioned sections.

#### COLFAX COUNTY.

Colfax County easily takes first place among the coal-producing counties of the Territory, with a net output of 821,267 tons. It is quite reasonable to expect that this county will pass the million-ton mark in its shipments of coal during the ensuing fiscal year.

The Dawson mines, of Colfax County, take precedence of any other coal camp in the Territory, with a net production of 433,076 tons; the Willow mines, in the same county, taking second place in the Territorial production, with 340,455 tons. A year ago the mine inspector, alluding to these two mines in his report, asserted that "The mines above mentioned could within one year be developed to a producing capacity of 1,000,000 tons per annum, which production could again be increased to 4,000,000 or 5,000,000 tons per annum within four or five years, provided the demand and transportation facilities would justify the great expenditure for development and equipment;" and within the year the assertion would have been verified if the demand had continued during the summer months. Even with lack of demand in the summer months the net product of the two coal properties was 773,531 tons.

DAWSON MINES NOS. 1, 2, 3, 4, AND 5.

[Dawson Fuel Company, owners and operators.]

The Dawson mines are located in secs. 1 and 2, T. 29 N., R. 20 E., New Mexico principal base and meridian. The mines are situated about 35 miles southwest from Raton, Colfax County, N. Mex. The mines are owned by the Dawson Railway and Coal Company, 68 William street, New York City. Name of operator, Dawson Fuel Company, Alamogordo, N. Mex.; W. P. Thompson, general manager, Dawson, N. Mex.; Allan French, superintendent, Dawson, N. Mex.

The Dawson Railway, a railroad built for the transportation of coal from these mines, connects with the Rock Island Railroad at Tucumcari, N. Mex., the distance being 168 miles. This railroad crosses the Atchison, Topeka and Santa Fe Railroad at French Station, 18 miles east of Dawson. Connection can also be made with the Atchison, Topeka and Santa Fe Railroad at this point, but at present there are no hotel accommodations for passengers who have to remain at French Station awaiting trains on either of the railroads mentioned while en route to or from Dawson. A passenger coach is run upon the trains upon the Dawson Railway between Dawson and Tucumcari. From the latter station there is first-class railway accommodation either east or west.

There are known to be three coal seams of workable thickness in the Dawson Coal Measures. Only one seam is now worked, the thickness of which varies from 6 to 11 feet, with a thickness of 8 to 9 feet predominating. The thickness of vein in No. 1 mine is 11 feet, in No. 2 mine 8 feet. In No. 2 mine there is a shale parting 2 inches in thickness at about 2 feet from bottom of vein. The thickness of vein on No. 3 mine is the same as on No. 2, with similar conditions as to shale parting.

Mines Nos. 4 and 5 were opened during the past fiscal year. No. 4 mine lies between Nos. 1 and 2 mines and is connected with No. 2 mine. No. 5 mine is about 1 mile distant from the other mines of the group and is about a mile closer to the tipple. The conditions in these two new mines are similar to the condition of the coal seam in the other mines mentioned.

The coal lies nearly horizontal, with little, if any, broken ground or disturbance of the formation. It is safe to presume that these



workings are upon the same coal seam that is being operated by the Raton Coal and Coke Company in Spring Gulch, 12 miles north. The Dawson Fuel Company owns over 21,000 acres of land in the intervening space between the Dawson mines and the Willow mines underlain by this great coal vein, as well as many other seams, some of them being of good workable thickness. The system of working is by triple main, drift entries, double-cross entries, room and pillar. The main adits upon each of the mines Nos. 1 and 2 have attained a length of 2,000 feet each.

The mines are at present ventilated by means of two 24-foot Vulcan fans, with a capacity of 235,000 cubic feet of air per minute each. Electricity is used for motor haulage inside the mines and from the mines to the partings outside. The haulage from the mines to the tipples is done by two 30-horsepower Porter locomotives. Six steam engines are in use upon the property, with a total capacity of 1,000 horsepower, as follows: Generator engine, 350; washer, 300; box-car loader, 100; screw, 25; electric light, 25; fans, 150; pumps, 50; total, 1,000 horsepower.

Between mines Nos. 1 and 2 is located the electric power house. The building is frame, 60 by 30 feet in dimensions. The plant consists of two (General Electric Company) direct-connection generators; combined efficiency, 240 kilowatts; voltage, 250. 1,000 amperes. Electric power is used to operate the coal-cutting machines, of which five Jeffrey machines are used for driving entries. Four Jeffrey and one Westinghouse motors are in use for haulage from the mines to the partings outside; total capacity of 5 motors, 2,500 tons per day. In capacity, improved appliances, and economical methods this plant is unsurpassed by any in the West, and only in capacity can it be considered as second to any coal-mining plant either East or West. To enumerate a part of these improvements and equipment the following are the more important: A double trestle with two tipples and two chutes for loading railroad cars. In connection with the tipples there are stationary and shaking screens for sizing coal for domestic and other purposes; also moving slate-picking table.

Alongside the tipples and chutes is located the washery, where slack or other coal is automatically transferred from the screens and chutes, washed, and loaded into the lorries to be dumped into the coke ovens situated within a distance of a few hundred yards from the washery. The washery has a capacity of 1,000 tons in ten hours, and is equipped with 16 jigs and the necessary auxiliary machinery to operate them. The power for operating this plant is furnished by two sets of Stirling boilers of a combined efficiency of 500 horsepower. The power to operate the box-car loader and charge the coke ovens is furnished from the same source. One hundred and twenty-five coke ovens have been in operation during the past fiscal year. Near by is located the blacksmith shop, built of iron, dimensions 70 by 30 feet. This shop is equipped with lathes, emery grinder, electric drilling machine, bolt and pipe cutting machinery, and blower of ample capacity to run four forges. This department is in condition to do all ordinary repair work. Power to run this machinery is provided by a 25-horsepower General Electric Company's motor. The tipples, washery, coke ovens, etc., just described are located about 1½ miles south of the mines, the town which is incident thereto being named Eddy, after C. B. Eddy, one of the principal promoters of



this great enterprise. At this point also are located the carpenter shop, 30 by 40 feet; storage building, 30 by 60, and numerous tenement houses. About 2 miles north of Eddy and near No. 1 mine is located Simpsonville, so called after one of the principal owners in the company. Here are located many commodious dwelling houses, built upon modern and pleasing plans of architecture. Several of these buildings are boarding houses. These houses are all built much after the style of suburban home architecture, pleasing to the eye from without and having modern improvements within.

Dawson is the name of the town 2 miles south of the mines where the general offices of the company are situated and where the residences of the superintendent and other officials are located. The town lies in the beautiful Vermejo Valley, which is irrigated by the crystal waters of the Vermejo River. On either hand are seen orchards, which in spring fill the air with the fragrance of their blossoms and in fall are laden with luscious fruits, while the prevailing gentle winds come down the canyon pregnant with the perfume of the pines which adorn the eroded canyons and the table-topped sandstone hills upon all sides. The Vermejo River runs alongside the town. In this ideal location is situated the headquarters of the Dawson Fuel Company. Here is located the principal mercantile establishment of the camp, owned by the Southwestern Mercantile Company. The building is 90 by 72 feet and of more than ordinary architectural beauty. A branch store is located nearer to the mines. Here also are located the pumping plant and waterworks. An abundance of pure water is obtained from the Vermejo Valley. The waterworks plant consists of a Cameron pump, 20 by 30 by 10 inches. The power is supplied by one 60-horsepower tubular boiler and one 40-horsepower Scotch marine boiler. Water is conveyed to different parts of the mines and operating plants by pipe line, and the same mains convey water to all the houses for domestic purposes. This coal-mining enterprise, as a whole, is a remarkable one by reason of the celerity with which it was initiated and put in successful operation.

Average number of men employed outside, including coke ovens and washery, 155; average number of boys employed outside, 5; average number of men employed underground, 300; average number of boys employed underground, 7. Nationality to which the men belong: Austrian, Finn, Italian, Mexican, negro, English, Welsh, Irish, and American. Percentage could not write, as denoted by signatures to vouchers: Mexicans, 20 per cent; negroes, 10 per cent; other nationalities, about 5 per cent. Number of days mine was operated during fiscal year, 280. Gross output for fiscal year (June 30, 1903, to June 30, 1904), 443,398 tons; amount used in operating mines, 10,322 tons; net product, 433,076, a net increase of 193,097 tons over preceding fiscal year. Estimated value of the net product at mine, at an average of \$1.20 per ton, \$519,691.20. About 20 per cent of the production is sold to the Chicago and Rock Island Railroad, and the balance sold to railroads, smelters, and other consumers, who are tributary to the El Paso, Tex., market. The coal is shipped over the Dawson Railway, Chicago, Rock Island and Pacific Railroad, and El Paso and North Eastern Railroad. Until April, 1904, the demand was in excess of the supply, but in the summer months

the demand was much less than the capacity of the mines for production.

In addition to the coal produced from the mines, there was shipped 35,800 tons of coke, of an estimated average value at the mine of \$3 per ton; total value of coke, \$107,400.

Many important improvements have been made during the past fiscal year, including additions to the electric and steam equipment, motors, etc., together with a great many new dwelling houses.

The prospect for a continued production from these mines during the coming year is very good, and if the demand justifies it there is no doubt the production will be largely increased.

#### CLIMAX AND SUGARITE MINES.

[Raton Fuel Company, lessee and operator.]

The Climax mine is located in the SE.  $\frac{1}{4}$  of sec. 23, T. 31 N., R. 23 E., New Mexico principal base and meridian. It is about  $1\frac{1}{2}$  miles northwest of the town of Raton, Colfax County, N. Mex. A. L. Hobbs, general manager; Allen Hellas, superintendent. The product is a good grade of bituminous coal; thickness of vein,  $4\frac{1}{2}$  feet, nearly horizontal. System of working: Drift, cross entry, room, and pillar. Ventilation by furnace shaft. Length of main drift entry, 1,500 feet. Mule haulage. Average number of men employed underground, 4; nationality of employees, English. Number of days mine was operated during fiscal year ending June 30, 1904, 308; number of tons of coal mined during fiscal year, 4,451. Estimated value of product at mine, \$4,451. The coal is hauled in wagons to the town of Raton, where it is sold for domestic use. Value of improvements during fiscal year, \$500.

#### SUGARITE MINE.

This mine is located on the west side of Sugarite Creek, and on the east slope of Bartlett mesa, about  $3\frac{1}{2}$  miles in a direct line, in a northeasterly direction, from Raton, N. Mex. A. L. Hobbs, general manager; W. P. Edwards, superintendent. The mine produced a good grade of bituminous coal; thickness of vein, 5 feet, nearly horizontal. System of working: Drift, cross entry, room and pillar. Length of main drift, 400 feet. Average number of men employed underground, 4. Natural ventilation. Number of days mine was operated during fiscal year, about 308; number of tons of coal produced, 3,221; estimated value of output at mine, \$3,221. The coal is hauled in wagons to Raton, N. Mex., where it is sold for domestic purposes.

#### WILLOW MINE.

[Raton Coal and Coke Company, owner and operator.]

The Willow mine is located in secs. 34 and 35, T. 30 N., R. 22 E., New Mexico principal base and meridian. It is operated by the Raton Coal and Coke Company; J. Van Houten, general manager; William J. Murray, general superintendent. The mine is situated about 14 miles southwest from Raton, Colfax County, N. Mex., and about 9 miles from Hebron station, on the Atchison, Topeka and Santa Fe Railroad. A branch railroad has been built from the mine



to connect with the main line of the Atchison, Topeka and Santa Fe Railroad at Hebron. This branch railroad was completed and operation commenced December 1, 1902, since which date the Willow mine has been one of the largest and steadiest coal producers in New Mexico. The coal is a good quality of bituminous coal, from which a good quality of coke is made, the slack being hauled by railroad to the washery and coke ovens at Gardiner, N. Mex. There has been no production of coke from these mines during the past fiscal year.

The seam is from 6 to 11 feet in thickness, lying nearly horizontal. Three openings are being worked, one upon the north side and one upon the south side of Spring Gulch, about one-half mile west of the junction with Willow Creek. Upon the north side of Spring Gulch the coal seam is from 6 to 11 feet in thickness of clean, marketable coal, averaging about 9 feet. On the south side of Spring Gulch the coal seam shows a parting of bone or shale 4 feet in thickness, leaving from  $4\frac{1}{2}$  to 5 feet of clean coal both above and below. Another opening is operated upon the same coal seam about three-fourths of a mile south from the openings on Spring Gulch. This opening is situated upon the main fork of Willow Creek.

The general characteristics of the coal seam at this point are similar to those described on the south side of Spring Gulch. These three openings are known collectively as the Willow mine. This magnificent coal seam covers a known area of 40 to 60 square miles, through a formation apparently little faulted or disturbed. At many places throughout this area the coal seam is exposed by erosion of canyons and gulches, and at every place where an outcrop is found there is seen the same uniformity as to size of coal seam, and apparently little disturbed bedding plane. Electric power is employed for haulage, running fans, etc. A Card generator is in use, with an efficiency of 375 horsepower, a 550-volt current being transmitted to the various points where used. Exhaust fans are used, but the fans are erected so that the current may be reversed in a very short time in case of necessity. Three motors are in use to haul the coal from the partings in the mine to the tippie, one 10-ton Jeffrey motor and two 15-ton Morgan-Gardner motors. Coal-cutting machines are not in use at present, but the mine is equipped with machines for use when needed. Two steam engines are in use, one of 250 horsepower and one of 170 horsepower. System of working: Double entry, room and pillar. Average length of main drift entries, about 3,000 feet. Number of men employed underground, 219; number of boys employed underground, 4; average number of men employed outside, 38; average number of boys employed outside, 6. Nationalities of employees: Mostly Italians, Austrians, and Germans, of the more intelligent and educated class, as evidenced by the fact that nearly all of them speak English and 99 per cent of them can read and write, as shown by signatures to vouchers.

Number of days mine was operated during fiscal year, 296. Gross product of mine, in tons of 2,000 pounds, 343,612 tons; amount used in operating mine, 3,157 tons; net product, 340,455 tons; estimated value of net output at mine, \$391,523.25. The coal is sold to the Atchison, Topeka and Santa Fe Railroad and at various points throughout Arizona. The demand for coal from this mine was very much in excess of the supply until April 1, after which date the demand diminished materially; it is certain that the demand will



again increase during the winter months. A general strike in district No. 15 was called by the United Mine Workers of America on November 9, 1903, and although the miners were contented and claimed no grievances, nor made any demands, yet they were called out by the district officers of the union, residents of Colorado, where is located headquarters of the district union officials. The employees quit work at the call of the union officials, the places of the union workmen being now filled by nonunion employees and the mine operating as before the strike was called. The estimated decrease in production on account of the strike was 66,180 tons. The use of fuel oil from the Beaumont oil field has caused a decrease in demand for the coal from this field amounting to about 15,000 tons per month. This decrease of demand was in the El Paso market and tributary thereto. A large percentage of the loss of demand for coal was on the locomotives of the Southern Pacific Railroad, fuel oil being substituted for coal. The net product of the Willow mine for the year ending June 30, 1903, was 165,115 tons, against 340,455 tons, net product, for the past fiscal year—an increase of net production of 175,340 tons, equal to 106 per cent, more than the preceding year.

It is probable that the ensuing year will show another increase in production, but it is not likely that it will be so great a percentage as the year just past.

#### DUTCHMAN MINE.

The Dutchman mine is located in secs. 16 and 17, T. 31 N., R. 23 E., New Mexico principal base and meridian. It is situated in Dutchman Canyon, about 6 miles, by wagon road, in a north-westerly direction from Raton, N. Mex. It is owned and operated by the Raton Coal and Coke Company; J. Van Houten, general manager; William J. Murray, general superintendent; Albert Lloyd, superintendent; John Bell, fire boss. A spur of the Atchison, Topeka and Santa Fe Railroad connects the mine with the main line of railroad at Dillon station. Like the other Blossburg mines, it is located upon what is locally known as the "Raton vein," by some called the "Blossburg vein." The coal is a good grade of bituminous, making a good grade of coke. The coal seam is from 6 to 8 feet in thickness; dip of vein about  $1\frac{1}{4}$  per cent southwest. The mine is worked on the double-entry room-and-pillar system. The entries have been driven to a distance of 5,000 feet from the outcrop. The mine is ventilated by a 24-foot Guibal fan, exhaust, but reversible; capacity, 75,000 cubic feet per minute. The fan is run by an independent engine. One 550-volt 75-horsepower Card generator furnishes the power for haulage underground, while tail-rope haulage is operated from the mine partings to the tippie, the power being furnished by a 175-horsepower steam engine.

Average number of men employed outside, 20; average number of boys employed outside, 2; average number of men employed underground, 53; average number of boys employed underground, 1. The men are of various nationalities; Italians predominating. About 98 per cent of the employees could write, as shown by signatures to receipts and vouchers. The mine was operated 170 days during the fiscal year. Gross output, 38,126 tons; amount used in operating mine, 2,412 tons; net product of mine, 35,714 tons; estimated value of net product at mine, \$41,071. The coal is sold to the Atchison,

Topeka and Santa Fe Railroad and at towns along this line of railroad south of Raton, N. Mex.

A general strike was called by the United Mine Workers November 9, 1903, and the men all called out. The employees of this company presented no grievances nor made any demands on the company, but ceased work because told to do so by the district officers of the United Mine Workers. The strike still continues, but the mine is being operated with nonunion labor, of which there has been an ample supply during the past season. The production of the mine was lessened 11,100 tons by reason of suspension of work until nonunion miners filled the places of the strikers. The demand for the product of this mine was good and in excess of supply, but fell off considerably during the summer months. Fuel oil from Beaumont, Tex., has curtailed the demand 10,000 to 20,000 tons per month in the market tributary to El Paso, Tex. Extensive improvements have been made at this mine during the past year. A new tippie has been built; also new power house, fan-engine house, and haulage-engine house. A new haulage engine, four boilers, and new fan have been put in commission. The prospects for a big production from this mine in future are very bright. The substitution of tail-rope haulage for electric motors will expedite the transportation of the coal from the partings in the mine to the tippie, as the grade was too heavy for economical operation with motors; the capacity for production will thus be much increased. Nearly every entry in the mine shows 8 feet of coal at the face.

#### LLEWELLYN MINE.

[Thomas Llewellyn, owner and operator.]

This mine is located in secs. 17, 18, and 20, T. 31 N., R. 26 E., New Mexico principal base and meridian, about 12 miles northeast from the town of Raton, Colfax County, N. Mex. It lies about 200 feet beneath the lava sheet which constitutes the top of Johnson Mesa. The coal seam outcrops in the several canyons eroded along the sides of the elevation known as "Johnson Mesa." The town of Raton is the nearest railroad point. The coal is a good quality of bituminous; thickness of vein,  $7\frac{1}{2}$  feet; lies nearly horizontal. System of working, drift, single entry, room and pillar; length of main drift entry, 500 feet; system of ventilation, air shaft. Number of men employed underground, 2; 1 boy employed outside; number of days mine worked during fiscal year, 300; number of tons of coal produced during same period, 2,000; estimated value of product at the mine, \$2,000. The coal is sold to the farmers upon Johnson Mesa and to residents of Folsom and Raton, N. Mex., for domestic purposes.

#### TURNER MINE.

[John F. Turner, owner and operator.]

The Turner mine is located in E.  $\frac{1}{2}$  NE.  $\frac{1}{4}$  and E.  $\frac{1}{4}$  SE.  $\frac{1}{4}$  sec. 18, T. 31 N., R. 25 E., New Mexico principal base and meridian, about 12 miles northeast from Raton, Colfax County, N. Mex. Like the Llewellyn mine, it lies about 200 feet beneath the lava sheet. Nearest railroad point is Raton, N. Mex. Thickness of coal seam,  $4\frac{1}{2}$  feet; kind of coal, bituminous; system of working, drift, room, and pillar;



ventilation, by air shaft; length of main drift entry, 500 feet. Number of men employed underground, 2; number of boys employed, 1 outside; number of days mine was operated, 225; number of tons of coal produced, 1,350; estimated value at the mine, \$1,350. Product sold for domestic uses at Raton, N. Mex., and to farmers upon Johnson Mesa. Since June 30, 1904, and before printing of this report, this mine changed ownership.

## HONEYFIELD MINE.

[Honeyfield Brothers, owners and operators.]

This is a new mine, opened during the past fiscal year. It is located about 9 miles northeast from Raton, Colfax County, N. Mex., that town being the nearest railroad point. The coal is a good quality of bituminous; thickness of coal seam, 5 feet, nearly horizontal. System of working: Drift, single entry, room and pillar. Length of main drift entry, 250 feet. Three men and 1 boy employed underground. Number of days mine worked during fiscal year, 120; number of tons of coal produced during same period, 1,000; estimated value at mine, at \$1.25 per ton, \$1,250. The coal was shipped to Raton, N. Mex., by wagon; thence part of it was shipped by rail to market in Colorado and Kansas during the strike last winter, and a portion of the product was sold in Raton, N. Mex., for domestic purposes. The data as to production is estimated by the mine inspector, as no information could be obtained from the operators.

## LINCOLN COUNTY.

Lincoln County ranks as third among the coal-producing counties of New Mexico for the fiscal year ending June 30, 1904. The Capitan mines produced 90,995 tons and the Old Abe mine, at White Oaks, produced 1,500 tons, or a total of 92,495 tons—a decrease of 5,591 tons from the output of the preceding fiscal year. The decrease is due to faults and rolls encountered in the Capitan mines, but Capitan mine No. 1 is in good condition for an increased production during the ensuing fiscal year.

## CAPITAN MINES NOS. 1 AND 2.

[New Mexico Fuel Company, owners and operators; W. P. Thompson, general manager; James McCartney, superintendent.]

The Capitan mines are situated at the town of Coalora, N. Mex., formerly called North Capitan, within 1 mile of the terminus of a branch of the El Paso and Northeastern Railroad. This branch road leaves the main line at Carrizozo station, 143 miles from El Paso, Tex., and 25 miles from the terminus of the branch at Capitan. Capitan mine No. 1 is located in sec. 4, T. 9 S., R. 14 E., New Mexico principal base and meridian. There are 10 seams of coal in these measures, but only 2 of workable thickness. These two veins are known as the "Ayers vein" and the "Akers vein." The former is from 2 to 2½ feet in thickness and the latter from 3½ to 6 feet in thickness. Only the Akers vein is at present operated in mines Nos. 1 and 2. Dip of vein, 12°; system of working, slope, double entry, room and pillar. The No. 1 mine is ventilated by an exhaust fan.



A 55-horsepower steam engine provides the power for haulage and a 20-horsepower engine runs the fan. Depth of main slope 1,100 feet.

Capitan mine No. 2, formerly known as No. 4 mine, is located in NE.  $\frac{1}{4}$  of NE.  $\frac{1}{4}$  and SE.  $\frac{1}{4}$  of NE.  $\frac{1}{4}$  sec. 8, T. 9 S., R. 14 E., New Mexico principal base and meridian. The mine is located upon the same branch of the El Paso and Northeastern Railroad as described in preceding article upon Lincoln County mines. It is located upon the same coal seam as Capitan mine No. 1, and has a thickness of  $3\frac{1}{2}$  to 6 feet of good quality of bituminous coal of a coking variety, similar in this respect to No. 1 mine. The seam dips at an angle of  $12^{\circ}$  and is worked by slope, cross entry, room and pillar; depth of slope, 1,700 feet; workings ventilated by exhaust fan. Steam power is used, 125 horsepower being utilized, as follows: Haulage engine, 50 horsepower; compressor, 55 horsepower; fan, 20 horsepower. Number of men employed underground in Capitan mines Nos. 1 and 2, 86; number of boys employed underground, 2; number of men employed outside at both mines, 22. Nationality of employees—Italians, Scotch, Irish, Welsh, Mexicans, and Americans. As shown by signatures to vouchers, 90 per cent of the Mexicans could write and 100 per cent of all other nationalities signed the vouchers. Number of days mines were operated, 308; gross output for fiscal year, 94,882 tons; amount used in operating the mines, 3,887 tons; net product of Capitan mines, 90,995 tons; estimated value of product at mines, at \$2 per ton, \$181,990.

The coal is marketed in El Paso, Tex. The town of Coalora has a population of about 400, all engaged in mining or business incident thereto. There are about 100 comfortable dwellings, a good school-house, two boarding houses, and a hospital maintained by the company. The location is most healthful, being 6 miles from Fort Stanton, which the United States Government has chosen for a sanitarium for the American merchant-marine sailors on account of its healthy atmosphere and surroundings, especially the very beneficial effects in tubercular disease.

#### OLD ABE MINE.

[Old Abe Gold Mining Company, owner and operator.]

The Old Abe mine is located in the NW.  $\frac{1}{4}$  sec. 9, T. 7 S., R. 13 E., New Mexico principal base and meridian. This mine is owned and operated by the Old Abe Gold Mining Company, a mining company also operating the Old Abe gold mine at White Oaks, N. Mex. John Y. Hewitt is general manager of the company and Arnold Ridgway superintendent of the coal mine. The coal mine is located about 12 miles north from Carrizozo station on the El Paso and Rock Island Railroad, and about 3 miles from the town of White Oaks, N. Mex. The mine produces a good grade of bituminous coal. There are two seams of coal upon the property, each 3 feet 6 inches in thickness. Only the No. 1 vein is being operated, No. 2 seam having an opening but 30 feet in depth on dip of vein; only sufficient development on this seam to demonstrate the thickness of seam and quality of coal. On No. 1 vein a slope has been sunk 450 feet, showing an even and continuous coal seam. System of working, combination of long wall with single entry, room and pillar. Natural ventilation through

second opening. A Common-Sense horsepower whim is used for hoisting the coal from the slope. Number of men employed underground, 2; number of men employed outside, 1. Nationality of employees—Americans and Mexicans; all could read and write. Number of days mine was operated during fiscal year, 186; production of mine, 1,500 tons; estimated value of output at mine, at \$2.50 per ton, \$3,750.

The data herein given as to production, etc., was estimated by the mine inspector, as no report was made by the operator.

#### MCKINLEY COUNTY.

McKinley County, while it has equal if not greater resources in coal areas and probably greater available tonnage, yet it takes second place among the coal-producing counties of New Mexico during the past fiscal year; the gross production being 537,812 tons, a decrease of the gross product amounting to 2,098 tons; amount used in operating mines, 13,245 tons, leaving the net product shipped 524,567 tons; a decrease as compared with the preceding fiscal year of 4,762 tons.

The development upon the mines as well as equipment gives a capacity far exceeding the production during the past year. The reason for decreased production was the lessened demand due to the use of fuel oil on the transcontinental railroads in the Pacific coast States as well as the use of fuel oil for manufacturing and domestic purposes in the same localities, as set forth more fully in preceding pages of this report.

#### WEAVER MINE.

[American Fuel Company, owner and operator.]

The Weaver mine is located in the SE.  $\frac{1}{4}$  of sec. 34, T. 16 N., R. 18 W., New Mexico principal base and meridian. The mine is owned and operated by the American Fuel Company; George W. Bowen, president; G. F. Bartlett, jr., general manager; addresses, E. and C. Building, Denver, Colo.; Thomas Pattison, general superintendent, Gallup, N. Mex.; Hugh McGinn, superintendent, Gibson, N. Mex.

The mine is connected with the main line of the Santa Fe Pacific Railroad at Gallup, N. Mex., by a branch road  $3\frac{1}{2}$  miles in length, which furnishes transportation facilities. There are six veins of coal in this property, identical with those hereinafter described in the Gallup mine. Two veins are being worked in the Weaver mine, known as Nos. 3 and  $3\frac{1}{2}$ . Thickness of coal seams—No. 3 vein, 5 feet; No.  $3\frac{1}{2}$  vein, 5 to 7 feet. Both seams have sandstone roof and floor in general throughout the mine. The mine is opened by drift into the veins, then by double entry, rib, and room system. The mine is ventilated by a propulsion fan, reversible. The mine mouth is located 800 feet from the tippie, on an elevation of 6 inches in 100 feet, so that mules easily haul the loaded trips to the tippie and have but a slight grade to overcome returning with the empty trip. A 30-horsepower steam engine runs the fan and an 80-horsepower engine the shaking screen and slack blower. Length of drift, 3,500 feet; dip of vein,  $3\frac{1}{2}$  per cent worked against the pitch. The mine is equipped with the most improved appliances for economical operation—tippie, chutes, shaking screens and slack blower, machine shop,



carpenter and blacksmith shops. Dwellings have been erected for the use of employees. A well 1,000 feet in depth furnishes an ample supply of water for the camp and mine; bath houses, with accommodations for 150 men; new stables, grain storehouse, powder magazine, and oil rooms. Average number of men employed underground, 190; average number of men employed outside, 143. The employees are of various nationalities and races—Americans, Hungarians, Italians, English, Irish, Scotch, Germans, Slavs, Swedes, Mexicans, Japanese, and Navaho Indians. As shown by signatures to vouchers, the following percentages of the different nationalities could not write: Mexicans, 10 per cent; Italians and Slavs, 8 per cent; Hungarians, 5 per cent; Germans, 4 per cent; Navaho Indians, 98 per cent; all others, 1 per cent.

The mine was operated two hundred and seventy-five days during the past fiscal year; the gross product of the mine was 323,805 tons; used in operating the mine, 4,208 tons; net output, 319,597 tons; estimated value of net output at the mine, at an average price per ton of \$1.38+, \$444,174.83. The coal was sold in California, Arizona, and New Mexico, a large percentage of it being used upon the Santa Fe Pacific Railroad. Use of fuel oil, as cited in earlier pages of this report, has diminished the demand for the product of this mine 5,000 tons per month at least.

The Weaver mine is a record breaker among New Mexico's coal-producing mines, the number of tons produced during the two past fiscal years being the largest tonnage ever taken out of any coal mine in New Mexico through a single opening, and all being brought out through one single main-drift entry with only one outlet for coal.

The camp is provided with all conveniences possible, and more than usually found in coal camps. Convenient hydrants supply water to all the dwelling houses, each house being supplied with covered garbage receptacles, which are emptied every day by a camp scavenger, with horse and wagon, employed by the company for the purpose. Every effort is made for the comfort and sanitary welfare of the employees. Two new slopes are being driven upon this mine, which will develop an extensive field of coal and increase the producing capacity of the property.

#### GALLUP MINE.

[American Fuel Company, owner and operator.]

The Gallup mine is situated at the village of Gibson, McKinley County, N. Mex. The mine lies in secs. 33 and 34, T. 16 N., R. 18 W., New Mexico principal base and meridian. The mine is owned and operated by the American Fuel Company; George W. Bowen, president; G. F. Bartlett, jr., general manager; addresses, E. and C. Building, Denver, Colo.; Thomas Pattison, division superintendent, Gallup, N. Mex.; Hugh McGinn, mine superintendent, Gibson, N. Mex.

The mine is connected with the main line of the Santa Fe Pacific Railroad by a branch road  $3\frac{1}{2}$  miles in length which furnishes transportation facilities for the product. There are 6 coal seams of workable thickness and extent in this property, with an average cover of 200 feet on top vein. The seams are all exposed by outcrop which



shows the distance between the seams to be very irregular—from 7 to 30 feet apart. The thickness of these coal beds is as follows: No. 1, 6 feet; No. 2, 5 feet; No. 3, 5 feet; No. 3½, 5 feet; No. 4, 4 feet; No. 5, 6 feet. Three of these veins—No. 3, No. 3½, and No. 5—are worked in the Gallup mine.

The mine is operated by slope, double entry, room and pillar system. Ventilation is by propulsion fan. Steam power is used in operating the mine—5 engines, of 100, 50, 100, 30, and 35 horsepower; total, 315 horsepower. This mine has precedence for the deepest slope in New Mexico—about 5,000 feet. Dip of coal seams from 5° to 14°; average, 10°. Average number of men employed underground, 41; average number of men employed outside, 35. The employees are of various nationalities and races—American, Hungarians, English, Irish, Scotch, Germans, Italians, Slavs, Swedes, Mexicans, and Japanese. As shown by signatures to vouchers, the following percentages of the different nationalities could not write: Mexicans, 10 per cent; Italians and Slavs, 8 per cent; Hungarians, 5 per cent; Germans, 4 per cent; Americans, English, Irish, and Scotch, 1 per cent.

The mine was operated eighty-six days during the fiscal year; the gross product of coal was 21,417 tons; used in operating mine, 637 tons; net output, 20,780 tons; estimated value at the mine, at an average price per ton of \$1.34+, \$28,046.06. The coal is sold in California, Arizona, and New Mexico, a large portion of it being used by the Santa Fe Pacific Railroad.

Operation of this mine was suspended during the early part of 1904 on account of a fire which has been burning in the old abandoned workings for many years, and appeared to be approaching the present workings as indicated by noxious gases which were perceptible to some extent in the part being operated. It was considered advisable to shut the mine and thus exclude air from the fire, which will probably die out. The same field can be reached from the new No. 3 slope being driven on the Weaver mine which adjoins the Gallup mine.

#### CATALPA MINE.

The Catalpa mine is located in NE. ¼ of sec. 34, T. 15 N., R. 18 W., New Mexico principal base and meridian. It is owned and operated by the American Fuel Company and under the same management as the Gallup and Weaver mines. The mine lies about 5 miles south of the town of Gallup, and is connected with the main line of the Santa Fe Pacific Railroad by a branch road 5 miles in length. There are 4 known seams of coal in the measures at this mine which average 5 feet in thickness. Two of these seams, known locally as the Crown Point and Thatcher veins, are worked through the Catalpa mine, the thickness of the coal in these seams being about 5 and 6 feet, respectively. Kind of coal, lignite; dip of vein, 8°; depth of slope, 2,400 feet. System of working, slope from outcrop, double entry, room and pillar. Ventilation by exhaust fan. Steam power is used for haulage and other purposes. Four engines, 125, 100, 30, and 35 horsepower, are used for haulage, operating tippie, screens, fan, etc. On February 14, 1902, operation of this mine was temporarily suspended because of the increased production of the Weaver mine being sufficient to supply all demands. In other words, the substitution of oil

for coal as a fuel in California and on the western divisions of the transcontinental railroads has lessened the demand from that direction upon the Gallup coal fields. This mine was not operated during the past fiscal year, although a few men were employed for a few weeks retimbering the main slope and other work necessary to the preservation of the mine.

W. A. CLARK MINE.

[Clark Coal Company, owner and operator.]

This mine is located in NE.  $\frac{1}{4}$  sec. 14, T. 15 N., R. 19 W., New Mexico principal base and meridian. It is owned and operated by the Clark Coal Company; office, 49 Wall street, New York City, N. Y.; W. L. Bretherton, agent, Clarkville, N. Mex. A spur of the Santa Fe Pacific Railroad connects the mine with the main line of the railroad and furnishes transportation facilities. The property has an area of 1,200 acres, underlain by five veins of coal of the following thicknesses, as shown by diamond-drill borings: Top vein,  $2\frac{1}{2}$  feet; second vein,  $3\frac{1}{2}$  feet; third vein,  $3\frac{1}{2}$  feet; fourth vein,  $5\frac{1}{2}$  feet, and fifth vein, 4 feet. The coal is a lignite and is used for steam and domestic purposes. Only one vein is worked at present, the third seam from the surface. This vein varies from  $4\frac{1}{2}$  to  $7\frac{1}{2}$  feet in thickness. Dip of vein varies from 1 to 11 per cent. The system of working is drift, double entry, room and pillar. Depth of main entry about 3,500 feet from mouth of entry to face.

The mine is ventilated by one Capell fan (exhaust), 14 feet in diameter, located on a shaft about the center of the workings, and one Buffalo fan inside. Electricity is used for haulage, running machines, and other power needed in the operation of the property. Capacity, 650 horsepower; 390 kilowatts, 250 volts, varying amperes as necessary. The electric machinery in use is of various types—Goodman, Morgan-Gardner, Jeffrey, Westinghouse, and Siemens-Halske. Six electric motors, four Goodman and two Jeffrey, aggregating 400 horsepower, are used to bring the coal out of the mine and on to the tippie. The mine is equipped with seven coal-cutting machines of 1,000 tons per day capacity. None of the cutting machines are now in use.

Average number of men employed underground, 98; average number of boys employed underground, 12; average number of men employed outside, 38; average number of boys employed outside, 12. The men are of various nationalities, Europeans predominating. As shown by signatures to vouchers, 95 per cent of the men could write. The mine was operated 287 $\frac{1}{2}$  days during the fiscal year. Total output for the fiscal year ending June 30, 1904, 132,000 tons. Number of tons used in operating the mine, 6,000. Net product of mine, 126,000 tons. This shows an increase in production above the preceding fiscal year of 23,000 tons. Estimated value of output at the mine, \$185,000. The coal is marketed in New Mexico, Arizona, California, Old Mexico, and Texas, a considerable portion being used at the copper mines of Senator W. A. Clark, at Jerome, Ariz., and on the S. F. P. and E. R. R. and United Verde and Pacific Railway.

The use of fuel oil in the territory where the coal from this mine was marketed, it is estimated, has lessened the demand 20 per cent and



consequently curtailed the production to that extent. The oils which have been substituted for this coal are produced at Bakersfield, Cal., and Beaumont, Tex. The California oil replaced coal from this mine for railroad purposes in the Pacific States and Territories, and the Texas oil replaced the coal in Old Mexico, New Mexico, and Texas for railroad, manufacturing, and domestic uses.

During the earlier part of the fiscal year the demand for coal was light, and in the winter months, when the demand was greater, there was a scarcity of miners, which was another factor in restricting the production of the mine.

#### OTERO MINE.

[Caledonian Coal Company, owner and operator.]

The Otero mine is located in the NE.  $\frac{1}{4}$  of the NW.  $\frac{1}{4}$  of sec. 14, T. 15 N., R. 18 W., New Mexico principal base and meridian. It lies about 3 miles east and 1 mile north of the town of Gallup, N. Mex. It is owned and operated by the Caledonian Coal Company, of Gallup, N. Mex.; Alexander Bowie, general manager; John Stewart, superintendent. A spur connects the mine with the main line of the Santa Fe Pacific Railroad.

Four seams of workable thickness are known in the property, viz.: Crown Point, Thatcher, Black Diamond, and Otero. Three of these veins are worked through the Otero mine, viz: Crown Point,  $4\frac{1}{2}$  feet in thickness; Thatcher,  $4\frac{1}{2}$  feet, and Otero, 5 feet thick.

The system of working is by slope, double entry, room and pillar. The mine is ventilated by a Crawford & McCrimmon 12-foot fan. Six steam engines are in use at the mine, viz: hoisting engine, 50-horsepower; blower, 25-horsepower; fan, 16-horsepower; 2 pump engines, 10-horsepower each, and 1 of 12-horsepower. Depth of slope, 1,400 feet; dip of vein, 2 to 8 per cent; kind of coal, lignite; thickness of vein, 5 feet; average number of men employed underground, 40; average number of men employed outside, 10; nationality of employees not obtained; number of days the mine was operated during the fiscal year, 185; total output for fiscal year, 27,854 tons; amount used in operating mine, 1,800 tons; net product, 26,054 tons; estimated value at the mine, \$41,781.

The coal is marketed principally in California, Arizona, and New Mexico, being shipped over the Atchison, Topeka, and Santa Fe Railroad, Cananea, Yaqui River and Pacific Railroad, and El Paso and Southwestern Railroad.

The output of this mine was very much restricted by reason of excess of supply over demand, partly attributable to substitution of oil for fuel in the localities heretofore dependent upon these coal fields for fuel supply.

#### THATCHER MINE.

[Caledonian Coal Company owner and operator.]

The Thatcher mine is located in the SW.  $\frac{1}{4}$  of sec. 12, T. 15 N., R. 18 W., New Mexico principal base and meridian. The mine is situated about 3 miles, in an easterly direction, from the town of Gallup, McKinley County, N. Mex. The mine is owned and operated by the Caledonian Coal Company, Alexander Bowie general manager.



A spur connects the mine with the main line of the Santa Fe Pacific Railroad. Two coal seams are worked in the Thatcher mine, one known as the Thatcher and the other as the Black Diamond. Average thickness of each coal seam, 4 feet 6 inches. System of working, slope, double entry, room and pillar. Ventilation, by exhaust fan. Six steam engines are in use, viz, hoisting engine, 160 horsepower; blower, 60 horsepower; fan, 16 horsepower, and two pumping engines of 10 and 12 horsepower. Dip of coal seams, about 4°; depth of slope, 1,800 feet. Average number of men employed underground, 28; average number of men employed outside, 5. Nationality of employees not obtained. Number of days the mine was operated during fiscal year, 55; total output for fiscal year, 4,736 tons; amount used in operating mine, 600 tons; net product, 4,136 tons; estimated value at the mine, \$7,104.

The coal is marketed principally in California and Mexico, being shipped over the Atchison, Topeka and Santa Fe Railroad, Cananea, Yaqui River and Pacific Railroad, and El Paso and Southwestern Railroad.

The output of this mine was very much restricted by reason of excess of supply over demand, partly attributable to substitution of oil for fuel in the localities heretofore dependent upon these coal fields for fuel supply. Operation of this mine temporarily suspended.

#### ROCKY CLIFF MINE.

[Stephen Canavan owner and operator.]

The Rocky Cliff mine is located in the SE.  $\frac{1}{4}$  of SE.  $\frac{1}{4}$  of sec. 10, T. 15 N., R. 18 W., New Mexico principal base and meridian. It is situated about 2 miles northeast from the town of Gallup, N. Mex. The mine is owned and operated by Stephen Canavan; address, Gallup, N. Mex.; Charles Alsdorf, superintendent. A spur connects the mine with the main line of the Santa Fe Pacific Railroad. Thickness of coal seam, 5 feet; dip, about 3 per cent; system of working, slope, single entry, room and pillar; depth of slope, 1,200 feet; ventilation by furnace shaft. Mule haulage to tippie. Average number of men employed underground, 20; number of men outside, 1. Nationality of employees, principally Europeans. Percentage who could not write, as shown by signatures to vouchers, 1 per cent. Number of days mine was operated, 260; total output, 18,000 tons; estimated value of output at mine, \$25,200. The coal is marketed in Arizona, California, and New Mexico, and is shipped via the Atchison, Topeka and Santa Fe Railroad. The same causes which restricted production of this field also restricted production at this mine, viz, substitution of fuel oil.

#### UNION MINE.

[Union Coal Company owner and operator.]

The Union mine is located in N.  $\frac{1}{2}$  of NE.  $\frac{1}{4}$  of sec. 28, T. 15 N., R. 18 W., New Mexico principal base and meridian. It lies about 2 miles south of the town of Gallup, McKinley County, N. Mex. It is owned and operated by the Union Coal Company, John C. Spears, president; William McVickers, general manager. The members composing the company are J. C. Spears, William McVickers, H. Brown, T. A. Fabro, D. Clark, and William Kilpatrick.

Three seams of workable thickness are known to exist in the company ground. The seams are known as the Aztec, Black Diamond, and Thatcher veins. The depths of these seams from the surface at which these coal seams occur are, respectively, as follows: 35 feet, 320 feet, and 360 feet. These seams outcrop in the canyon half a mile distant from the Union mine. The thickness of the beds are as follows: Aztec, 5 feet 4 inches; Black Diamond, 6 feet 6 inches, and Thatcher, 5 feet 8 inches. The Union Company is operating upon the Black Diamond seam.

The mine is opened by slope, double entry, room and pillar system; ventilated by furnace. Depth of slope, 700 feet; dip of coal seam, 17°. A 20-horsepower steam engine supplies the power for haulage from mine to tippie. The hoisting plant upon this mine was burned twice during the years 1901 and 1902, and was not replaced when burned the last time. Operation has been suspended for the past year.

#### CASNA MINE.

[Andrea Casna, owner and operator.]

The Casna mine is located in SW.  $\frac{1}{4}$  of sec. 18, T. 15 N., R. 18 E., New Mexico principal base and meridian. It lies about 2 miles west of the town of Gallup, McKinley County, N. Mex. It is owned and operated by Andrea Casna. Kind of coal, lignite; one vein worked; thickness of coal seam, 4 feet; system of working, slope, room and pillar; ventilation by two air shafts; dip of coal seam, 2 per cent; length of slope, 1,100 feet; mule haulage. The mine has not been worked during the past year.

#### BLACK DIAMOND MINE.

[Sharp & Fishburn, owners.]

The Black Diamond mine, formerly known as the "Stewart mine," is located in the SE.  $\frac{1}{4}$  of sec. 16, T. 15 N., R. 18 W., New Mexico principal base and meridian. It is located about  $1\frac{1}{2}$  miles from the Santa Fe Pacific Railroad station at Gallup, N. Mex., to which point the coal is hauled in wagons for shipment by rail. The property is owned by Sharp & Fishburn; John Sharp, superintendent. The mine is supposed to be on the Black Diamond coal seam. The coal is bituminous; thickness of seam, 5 feet; dip of seam, about 18°; system of working, slope, single entry, room and pillar; depth of slope, about 700 feet; natural ventilation by air shaft; steam hoist. Average number of men employed underground, 10; average number of men employed outside, 6; number of days mine was operated during fiscal year, about 180. Estimated net product, 10,000 tons; value at mine, \$15,000. The coal is marketed in Arizona, California, and New Mexico, and is shipped via the Santa Fe route.

#### RIO ARRIBA COUNTY.

Rio Arriba County ranks fifth among the coal-producing counties of New Mexico, the production for the past fiscal year amounting to 41,200 tons, an increase over the production of the preceding year of 2,100 tons. While it is not probable that Rio Arriba County will ever be a close competitor for first place among the coal-producing

counties of the Territory, yet it is certain, from the favorable location of its mines and the territory dependent upon them for the nearest accessible fuel supply, that the production of Rio Arriba County mines will be greatly increased in the near future, and also that new mines will be opened to supply the increased demand, which is now easy to foresee.

#### MONERO MINE.

[Rio Arriba Coal Company, owner and operator.]

The Monero mine is located in the NE.  $\frac{1}{4}$  of sec. 18, T. 31 N., R. 1 E., New Mexico principal base and meridian. The mine is located at Monero Station, on the Durango branch of the Denver and Rio Grande Railroad, and between Durango and Antonito, Colo., but south of the State line and in the Territory of New Mexico. The mine is owned and operated by the Rio Arriba Coal Company; J. H. Crist, general manager; address, Monero, Rio Arriba County, N. Mex.

The coal is an extra good quality of bituminous coal, an especially good coal for both steam and domestic use. There are three workable veins in this coal field, of the following thicknesses, respectively, 4 feet, 3 feet 4 inches, and 3 feet. The Monero mine is opened by slope, cross entries, and rooms. A slope has been driven 1,600 feet in depth upon the 4-foot seam, and another slope 900 feet in depth upon the 3-foot 4-inch seam. The coal seams dip at an angle of 7 per cent toward the west. The power for hoisting is supplied by a 45-horsepower double-cylinder steam engine. Average number of men employed underground, 25; average number of men employed outside, 7; average number of boys employed underground, 1. Spanish-speaking natives of New Mexico are employed outside. Various nationalities employed underground, Americans, Irish, Germans, and Italians, 90 per cent of whom could write, as shown by signatures to vouchers.

The mine was operated two hundred and seventy-four days during the fiscal year ending June 30, 1904; total output for fiscal year, 26,000 tons; used in operating mine, 800 tons; net product, 25,200 tons; estimated value of product at mine, \$38,000. The coal is nearly all sold to the Denver and Rio Grande Railroad for operating purposes. A small proportion of the product is marketed in the San Luis Valley, Colorado, and near-by camps, and some is sold in Santa Fe, N. Mex. The demand for coal in this immediate vicinity is greater than the production, scarcity of miners being the principal factor in restricting production.

#### M'BROOM MINE.

[Rio Arriba Coal Company, owner and operator.]

The McBroom mine is located in the SE.  $\frac{1}{4}$  of sec. 17, T. 31 N., R. 1 E., New Mexico principal base and meridian. The mine is situated about  $1\frac{1}{2}$  miles from Monero station, on the Denver and Rio Grande Railroad, to which place the coal is hauled upon wagons and thence shipped by rail. The mine is owned and operated by the Rio Arriba Coal Company, J. H. Crist, general manager. The coal of this mine is a good grade of bituminous coal; thickness of



coal seam, 4 feet; system of working, slope, single entry, room and pillar; length of main slope, 450 feet, ventilated by furnace shaft; dip of coal seam 8°; mule haulage is used out of mine to tippie. Average number of men employed inside, 7; average number of men employed outside, 2; number of days mine worked during fiscal year ending June 30, 1904, 260. Number of tons of coal produced during fiscal year, 4,000; estimated value of product at mine, \$4,000. The product is disposed of to the Denver and Rio Grande Railroad.

## KUTZ MINE.

[George W. Kutz, owner and operator.]

The Kutz mine is located in NW.  $\frac{1}{4}$  sec. 17, T. 31 N., R. 1 E., New Mexico principal base and meridian. It lies within one-half mile of Monero station, on the Denver and Rio Grande Railroad, which transports all the coal from the mine to market. The mine is owned and operated by George W. Kutz, who is general manager of the property, with office at Lumberton, Rio Arriba County, N. Mex.; George W. Kutz, jr., superintendent, Lumberton, N. Mex.

There are two known veins upon this property, the upper vein being 4 feet and the lower vein 3 feet 10 inches in thickness; dip of coal veins, 11 per cent; system of working, slopes, single entry, room and pillar; ventilated by furnace and air shaft. Depth of slope on upper coal vein, 500 feet; on lower coal vein, 700 feet. A 30-horsepower steam engine is used for haulage from mine to tippie. Average number of men employed underground, 13; average number of men employed outside, 3. Nationality of employees: Americans, Irish, Italians, and Mexicans, all of whom could write, as indicated by signatures to vouchers. Number of days mine was operated during fiscal year ending June 30, 1904, 210; total output, 12,000 tons; no account kept of slack for fuel at mine; net product, 12,000 tons; estimated value at mine, \$19,200.

The coal is sold to the Denver and Rio Grande Railroad, and in the San Luis Valley, Colorado, and Santa Fe, N. Mex. No. 2 slope, which is driven on the upper coal seam, was opened during the past fiscal year. The value of improvements during the year, including value of this slope, amounted to \$3,000.

The employees are given a "coal ticket" every day, which is virtually a duebill for the amount earned each day. This ticket is good in the store of G. W. Kutz & Co. for the purchase of any goods desired during the month or payable on the 1st and 16th of each month in cash. This system of payments seems to give satisfaction to the men employed.

## SANTA FE COUNTY.

Santa Fe County ranks fourth among the coal-producing counties of New Mexico. The Coal Measures of this county merit and have attracted more attention than the coal fields of any other county in New Mexico. This is due not to the extraordinary extent of the coal beds, but to the peculiar geological conditions which there prevail. In the immediate vicinity of the town of Madrid are found strange and anomalous coal beds. The bituminous and anthracite coals occur in juxtaposition in the same coal seam. The younger

coal seams of the series are sometimes highly metamorphosed and anthracited, while the older veins have not passed the bituminous stage. In some instances a part of a coal vein may be anthracite, while a few hundred yards distant laterally the same vein may produce bituminous coal. The geological peculiarities of these Coal Measures are due to the action of intrusive sheets of porphyrite, the near approach of which in places furnished the agency for local metamorphism of the Coal Measures, thus producing the anthracite coal here found.

The coal produced from the Cerrillos Bituminous (Cook & White) mine has until recently been a noncoking coal, but it was found that at a depth of about 2,600 feet in the slope the coal had changed to a very good coking coal. The change would indicate the nearer approach to one of the intrusive sheets and the possible change from bituminous to anthracite coal as closer approach is made to the intrusion.

The principal mines of the district are the Cerrillos Bituminous, formerly known as the "Cook & White," and the Cerrillos Anthracite, formerly called the "Lucas mine."

The mines just named demand and receive constant attention from the mine inspector. The necessity arises from the fact that these are among the few dangerously gaseous mines in the Territory.

The coal production of Santa Fe County has been on the decline for the past three years. A fire in the Cerrillos Bituminous mine two years ago caused suspension of work below the fourth cross entry at a depth of 2,300 feet, and although the fire was long since extinguished and the locality in which the fire occurred is now hundreds of feet under water there has been no attempt on the part of the operators to reopen the lower levels; hence no new ground has been developed in this mine for two years, and the product of the mine has consequently been much restricted. In the Cerrillos Anthracite mine development was discontinued because a poor grade of coal was encountered in the bottom of the slope. It is more than probable that the inferiority of grade of coal was due to the nearer approach of the intrusive sheet, as similar occurrences of disintegrated coal were found and passed through in other parts of the mine, and it is very likely that further development would have passed through the zone of poor coal and into another good field of anthracite. The net product of these mines during the fiscal year ending June 30, 1903, was 83,340 tons, and during the year ending June 30, 1904, was 57,944 tons, a decrease of 25,396 tons.

#### CERRILLOS BITUMINOUS NO. 27 MINE.

The Cerrillos Bituminous mine is located in T. 14 N., R. 7 E., New Mexico principal base and meridian. It is situated at Madrid, a town at the end of a spur of the Atchison, Topeka and Santa Fe Railroad, 3 miles in length, which connects with the main line at Waldo station.

The mine is operated by the Rocky Mountain Coal and Iron Company; John T. Kebler, general manager, Boston Building, Denver, Colo.; James Lamb, superintendent, Madrid, N. Mex.; William West, pit boss.

The mine is opened by triple slopes 2,911 feet in depth, driven at



an angle of  $15^{\circ}$ , the direction of dip of the coal seam. Main entries or levels are driven from the main slope at intervals of 600 feet, and these entries are intersected by planes driven to the raise and on the dip, parallel to the main slope and at intervals of 600 feet, as the entries depart from the main slope. Thus the field is blocked into 600-foot squares. Back entries are driven parallel to main entry, and cross entries connect the main and back entries, maintaining a thorough system of ventilation. From the dip and raised planes rooms are turned 300 feet in length by 20 feet in width, a pillar of 30 feet being carried between rooms. This pillar is taken out in retreating, after the rooms from planes have made junction at the middle between two planes. Compressed-air engines hoist the product from the dip planes, or it is lowered by gravity to the entry below as soon as connection is made with the rooms above, whichever may be found most convenient and economical. The mine is ventilated by two exhaust fans, 14 and 16 feet, respectively, located upon fan shafts connecting with and exhausting from the extremities of the lateral openings from the main slope. The main slope is the intake, the air splitting at or near the bottom. The mines of this camp are among the few mines of New Mexico in which fire damp is found in sufficient quantity to be very dangerous, but so efficient have been the methods of ventilation employed under the present management, and so carefully are they guarded, that these mines are as safe as if no gas were present, and they will so continue to be as long as the same vigilance is exercised as now.

Wolf's miners' safety lamps are used. The lamps are locked in the lamp house by the magnetic device attached to the lamp, and can not be unlocked without the use of a powerful magnet; hence the lamps are not liable to be opened by the miners, as such a magnet as is used weighs about 20 pounds. These lamps give great satisfaction to those using them and are an invaluable safeguard in gaseous mines.

The Rocky Mountain Coal and Iron Company, which operated these mines, is under the same general management as controlled the company which preceded it in the operation of the mines. The same generous and enlightened policy is pursued in regard to the education of the children of the employees of the company. The public school fund of the county being insufficient to furnish the necessary number of teachers, the company pays the salary of one of the teachers and in many ways aids in the education of the children in the camp.

The Cerrillos Bituminous mine produces an excellent quality of bituminous coal; thickness of vein,  $3\frac{1}{2}$  to 4 feet. Average number of men employed underground, 52; average number of men employed outside, 19; average number of boys employed underground, 6; number of days mine was operated during fiscal year, 308. Total output for fiscal year, 42,131 tons; amount used in operating mine, 2,882 tons; net product, 39,249 tons; estimated value of product at mine—\$1.73+ per ton—\$68,264.55. Net decrease of tonnage below previous fiscal year, 6,488 tons.

The outside employees are Mexicans, Americans, Italians, negroes, Austrians, and Germans. Percentages of each nationality who could write, as indicated by signatures—negroes, 90 per cent; all others, 95



per cent. The underground employees are Italians, English, Scotch, Mexican, Austrian, German, American, and negroes. The percentages who could write, as indicated by signatures—negroes, 90 per cent; all others, 95 per cent.

The demand for this coal far exceeds the supply, the coal being of a superior quality, a limited working area restricting the production. The product is sold in New Mexico, Colorado, Texas, Arizona, and California, and is shipped via Atchison, Topeka and Santa Fe Railroad. There is little probability that the product of this mine will be increased during the coming year, but after the damage done by the fire of February, 1902, shall have been repaired and the lower entries reopened an increased production may be looked for. Recent judicious development has recovered some good bodies of coal which had been practically abandoned heretofore and which will have a good effect toward maintaining the production until the lower workings are reopened.

#### CERRILLOS ANTHRACITE MINE.

This mine, which is called by the operators the "Cerrillos Anthracite A 28 mine," is located at the town of Madrid, N. Mex., in T. 14 N., R. 7 E., New Mexico principal base and meridian. The mine was formerly known as the "Lucas mine." The mine is operated by the Rocky Mountain Coal and Iron Company, John T. Kebler, president and general manager; James Lamb, superintendent; James Bryden, pit boss.

The coal seam is first-class anthracite, equal to the best Pennsylvania anthracite; thickness of coal seam, 3 feet; average dip, 18 degrees; system of working, triple slope, double cross entries, room and pillar; present depth of slope, 2,300 feet, formerly 2,600 feet, but pillars have been drawn and lower 300 feet of workings abandoned on account of depreciated quality of coal encountered, caused by the nearness of lava sheet.

First-class anthracite has been found in diamond-drill hole a mile beyond the face of bottom of slope, which it is highly probable would have been encountered if slope had been continued.

In operating this mine the field is blocked into 600-foot squares in the same manner and the coal extracted in the same manner as described in the foregoing article upon the Cerrillos Bituminous mine.

Steam and compressed air are used at different points in operating. Three engines are used—one 30-horsepower and two 10-horsepower each.

The mine is ventilated by a double 6-foot Murphy exhaust fan, located upon the north side of the main slope, the air intake being through main slope, splitting near the bottom, the air from the south side of slope returning through an overcast cross slope to the return airway on the south side. The mine is equipped with a first-class hoisting plant, consisting of one pair Frazer & Chalmers hoisting engines, 100-horsepower, at the surface; two pair Lidgerwood hoisting engines underground, 40-horsepower; one fan engine, 15-horsepower. Steam is used for the hoisting engine at the surface and fan engine, and compressed air for the other engines. The breaker plant, where the coal is broken and assorted into the various sizes—grate, egg, stove, nut, and pea—is one of the most complete to be found any-

where. The breaker machinery is run by a 40-horsepower steam engine, with an auxiliary pair of 20-horsepower Lidgerwood engines for hoisting purposes. The building is ten stories in height, the dimensions being 250 feet long, 60 feet wide, and 110 feet high, the top of the breaker being on a level with the mouth of the slope.

Storage bins for each of the several sizes of coal are provided at the level of the railroad cars, which are loaded therefrom. These bins have a capacity of 75 tons each. Average number of men employed underground, 24; average number of boys employed underground, 2; nationality of underground employees, Americans, Italians, Mexicans, Germans, Austrians, and negroes. Ninety per cent of the negroes and Mexicans could write, and 95 per cent of the other nationalities, as shown by signatures to vouchers. Average number of men employed outside, 20, 14 of whom are employed at the mine and 6 at breaker; average number of boys employed outside, 10, 9 of whom were employed at the breaker. Nationality of outside employees, Americans, Mexicans, and negroes, of whom the same percentages could write as given above. Number of days mine was operated during fiscal year, 291.6; total output for fiscal year, 19,129 tons; amount used in operating mine, 4,726 tons—2,999 tons of slack; net product, 14,403 tons; estimated value of net product at mine, at an average of \$3.22 per ton, \$46,441.16.

The coal is marketed in Kansas, Colorado, New Mexico, Texas, Arizona, and California. The product is shipped from the mine via Atchison, Topeka and Santa Fe Railroad. The demand for this coal is far in excess of the supply, the output being restricted by limited capacity of the mine. There is little probability that the production of this mine can be increased, everything indicating a diminution in production. The depth of the main slope was about 2,900 feet, but the slope pillars have been drawn back to the depth of 2,569 feet.

The Cerrillos Anthracite mine is operated upon a coal bed overlying the Cerrillos Bituminous seam, being separated by a strata of sandstone of about 150 feet in thickness. On top of the Cerrillos Anthracite coal, and separated from it by sandstone strata 30 or 40 feet in thickness, is found the cause of the metamorphism of this coal bed, viz, an intrusive sheet of porphyrite about 350 feet in thickness. On top of this intrusive sheet and only separated by a light stratum of sandstone another seam of anthracite coal is found, 4 feet 2 inches in thickness, which is operated in the Anthracite B No. 33 mine. These coal veins produce anthracite coal equal in quality to the best produced in Pennsylvania.

#### CERRILLOS ANTHRACITE B NO. 33 MINE.

This mine is located about 1 mile east of the town of Madrid, N. Mex., in T. 14 N., R. 8 E., New Mexico principal base and meridian. It is operated by the Rocky Mountain Coal and Iron Company, John T. Kebler, president and general manager; James Lamb, superintendent; James Bryden, pit boss.

A 40-pound rail tramway about 1 mile in length connects the mine with the breaker on the Cerrillos Anthracite A 28 mine in the town of Madrid. The coal produced is an excellent quality of anthracite; thickness of coal seam, 4 feet; dip of vein, 9 per cent; length of slope, 535 feet. At this depth the coal was cut out by the intrusive



porphyrite sheet. From the general indications it would appear that this, as well as another segregated patch of coal, were thus located by being broken from the main body and floated to this place upon the lava lake and stranded upon top of the lava sheet in cooling, while the main coal bed from which it was broken lies beneath the lava sheet. The mine was opened by a triple slope, double cross entry, room and pillar system. It is ventilated by Murphy exhaust fan. Compressed air is used. It is conveyed by pipe line from the compressor house at Madrid. Capacity, 40 horsepower; one 20-horsepower engine is used for haulage from the mine to the parting on top, from whence the trips are hauled to the breaker by mules. Work was suspended upon the main slope and workings of this mine two years ago.

The property was then operated through the Martin entry, a new prospect opened across the arroyo from the main slope on this mine. The coal seam at this point was nearly horizontal. It was opened by a drift which attained a length of about 535 feet and 4 feet of clean, hard anthracite coal of excellent quality, but each entry was limited in length by the lava sheet which has been encountered in all entries thus far driven. Entry pillars are being drawn in the main workings and the prospects for a long continuance of production are not favorable. Average number of men employed underground, 7; average number of men employed outside, 1; nationality of men employed, Americans, Mexicans, and negroes; 85 per cent of Mexicans and negroes could write, and all of the American employees could write, as shown by signatures to vouchers. Number of days mine was operated during fiscal year, 251.4; total output for fiscal year, 5,578 tons; amount used in operating mine, 1,286 tons; waste, 775 tons; net product for fiscal year, 4,292 tons; estimated value at mine, at an average of \$3.10+ per ton, \$13,332.23. The product is marketed in New Mexico, Arizona, California, Colorado, and Texas, and is shipped via Atchison, Topeka and Santa Fe Railroad and connecting lines.

#### BLOCK COAL MINE.

The Block Coal mine is located in SW.  $\frac{1}{4}$  of SE.  $\frac{1}{4}$ , SE.  $\frac{1}{4}$  of SW.  $\frac{1}{4}$ , NE.  $\frac{1}{4}$  of SW.  $\frac{1}{4}$ , NW.  $\frac{1}{4}$  of SE.  $\frac{1}{4}$ , SE.  $\frac{1}{4}$  of NW.  $\frac{1}{4}$ , and S.  $\frac{1}{2}$  of NE.  $\frac{1}{4}$  of sec. 32, T. 13 N., R. 9 E., New Mexico principal base and meridian. It is owned and operated by the estate of Leonard Lewisohn, address, New York City, N. Y., Richard S. McCaffrey, general manager and agent of estate of Leonard Lewisohn, address, San Pedro, Santa Fe County, N. Mex. The new slope is in the NE.  $\frac{1}{4}$  of SW.  $\frac{1}{4}$  of sec. 32, T. 13 N., R. 9 E. It is about 16 miles southeast from Madrid, N. Mex., by wagon road, and about 12 miles from San Pedro, the product of the mine being used at the Santa Fe Gold and Copper Company's metal mines at the latter-named place, the coal being hauled in wagons. Operation of the metal mines has been suspended during the past year; hence there was no market for the product of the Block Coal mine, and it was not operated, the mine being too far from railroad transportation to place coal in other markets for sale. Kind of coal, bituminous; thickness of coal seam, 2 $\frac{1}{2}$  feet; dip of seam, 11 per cent; system of working slope, single entry, room, and pillar; depth of slope, 600 feet; ventilation by air shaft; haulage by horse whim.



## SANDOVAL COUNTY.

Sandoval County, the youngest of the counties of New Mexico, embraces within its limits a coal area of considerable importance.

## UNA DEL GATO COAL FIELD.

The Una del Gato, Coyote, and Pinavititos coal fields have recently attracted much attention among local coal operators. While the three names are used to designate the three localities within the area of the coal field, yet the outcrop is continuous and identical throughout all three coal areas as divided by imaginary lines and under different names.

This coal field is probably a portion of the same coal areas as the Madrid or Cerrillos mines, interrupted by the uplift of the Cerrillos Mountains on the northeast.

As the anthracite coal of the Cerrillos field is due to the rapid metamorphism produced by igneous intrusions, it is far more than probable, considering the igneous surroundings of the Una del Gato field, that anthracite coal will be found in this field by development in localities nearer to the uplift of the Cerrillos and San Pedro ranges.

The outcrop of the Una del Gato Coal Measures, showing four workable coal seams  $3\frac{1}{2}$  to  $4\frac{1}{2}$  feet in thickness, extends a distance of about 9 miles from northwest to southeast, diagonally across T. 13 N., R. 6 E., from section 6 to section 33, inclusive, with an almost continuous outcrop along an irregular line between the sections named. Two of the coal seams have from one to three dirt bands along the outcrop, but upon the Hagan mine, the only place the field has been developed to any great extent, the dirt band pinched out a depth of 260 feet.

About 12,000 acres, or more than half of T. 13 N., R. 6 E., has been already filed upon as coal lands, and about 2,000 acres of it has been purchased from the Government at \$20 per acre.

## HAGAN MINE.

The Hagan mine, mentioned in last annual report of the United States mine inspector as the Una del Gato coal mine, is located in NW.  $\frac{1}{4}$  of section 33, T. 13 N., R. 6 E., New Mexico principal base and meridian. It is owned by E. B. Field, of Santa Fe, N. Mex., and operated by the New Mexico Fuel and Iron Company, Santa Fe, N. Mex.; W. S. Hopewell, general manager, Santa Fe, N. Mex.; George T. Peart, superintendent, Hagan, Sandoval County, N. Mex.

A branch line 15 miles in length is being built to connect the mines with the Santa Fe Central Railroad; a survey has also been made for a branch line 12 miles in length to connect the mines with the Atchison, Topeka and Santa Fe Railroad at a point near Algodones station.

Four coal seams have been shown in the Hagan mine ranging from  $3\frac{1}{2}$  to 5 feet in thickness. These coal veins are known by the following names, in the order of their occurrence in depth from the surface, viz, McCance, Kennedy, Hopewell, and Andrews.

Only one coal vein is being developed at present, the Hopewell.

Thickness of vein, 4 feet 6 inches of clean coal without band of any kind; dip of vein,  $15^{\circ}$ ; system of working, triple entry slope, double cross entries, and room and pillar.

The coal is a good quality of bituminous coal especially desirable for domestic purposes as it is a free-burning coal, giving a white ash, and without clinker. It is quite probable that there will be an extraordinary demand for it, and that this coal will be substituted for many other coals now used in the Southwest for domestic purposes as soon as railroad transportation facilities are completed, so that it may be placed on the market. The mine was operated one hundred and four days during the fiscal year upon development work only. Depth of main slope, 712 feet; number of men employed underground, 10; number of men employed outside, including carpenters, mechanics, and laborers on work of construction, 10; gross output for fiscal year, 970 tons; amount used in operating mine, 200 tons; net product, 770 tons; estimated value of net product at mine, at \$1.50 per ton, \$1,155. The coal was hauled in wagons to San Felipe siding on the Atchison, Topeka and Santa Fe Railroad, and from there was transported by rail to Kennedy station on the Santa Fe Central Railroad, on which latter-named railroad the coal is used for fuel. No effort has been made toward a large production thus far, as lack of railroad connection prohibits the marketing of the coal; but it said that construction work has already commenced upon a branch of the Santa Fe Central Railroad to connect with the Hagan mine.

The prospects for the future of this mine are very bright, by reason of it being closer than competing mines to both home markets, and also closer to foreign markets of the Southwestern and Western States and Territories, which furnish the market for the great majority of the coal mined in New Mexico.

#### COYOTE MINE.

No data were obtainable from the operators of this property, the reply to inquiries being that as the mine had not yet commenced shipments, descriptions of the property would be of little interest.

The mine is located in what is called the Coyote field, being about half way between the Hagan mines and the Pinavititos coal field. The same series of coal seams as found in the Hagan mine extend into and through the Coyote field.

The Coyote mine is owned and operated by the Sloan Coal Company; John H. Sloan, president, Santa Fe, N. Mex.; Charles A. Spiess, vice-president and general solicitor, Las Vegas, N. Mex.; Alleta E. Sloan, secretary and treasurer, Santa Fe, N. Mex.; Thomas Gable, general superintendent; Richard Huber, mine superintendent. This property has been opened by a slope about 200 feet in depth which at the time of the mine inspector's visit was in a fault; the coal seam above the fault is about 7 feet in thickness, but has two bands of shale in it, reducing the thickness of the coal materially. It is not at all certain that this opening is upon the same coal seam as the Hagan mine, and it is quite probable that one or more of the other three coal seams in this property would develop a better and cleaner seam of coal. Many substantial improvements have been made upon this property during the past fiscal year.

## SAN JUAN COUNTY.

There is little doubt that the Coal Measures developed and operated in McKinley County, N. Mex., extend, with little interruption, across San Juan County, from south to north, to the Colorado line.

The coal seams of this county, where developed, are larger than has been found in any other section of New Mexico, ranging from 6 feet to 40 feet in thickness, of good marketable coal. This vast and valuable area of coal has attracted much attention during the past two years from capitalists and coal operators. Recently a company has been organized and incorporated with the avowed intention of building a railroad from Durango, Colo., via Clifton, Ariz., to connect with the Southern Pacific Railroad at some point between Lordsburg, N. Mex., and Benson, Ariz., or at either of the last-named points.

## STEVENS MINE.

The Stevens mine is located in sec. 4, T. 29 N., R. 15 W., New Mexico principal base and meridian. It lies about  $2\frac{1}{2}$  miles from the town of Fruitland, on the San Juan River. The mine is owned by Mrs. A. S. Young. It is operated under lease by Thomas Evans; address, Fruitland, San Juan County, N. Mex.

The nearest railroad point is Durango, Colo., 70 miles distant by wagon road. Kind of coal, bituminous; thickness of coal seam, 12 feet, 10 feet of which is clean, marketable coal, lying horizontal; system of working, drift, entry, room-and-pillar; extent of workings, main drift, 350 feet; right entry, 150 feet; left entry, 150 feet. Average number of men employed underground, 3; number of days mine was operated during fiscal year, 260; total output, 1,060 tons; estimated value at mine, \$1,325. The product is sold in the towns of Fruitland and Farmington and to farmers of the San Juan Valley.

## BRIMHALL MINE.

[Clayborne Brimhall, owner and operator.]

The Brimhall mine adjoins the Stevens mine and is upon the same coal seam, similar conditions existing as to size and character of coal, method of working, and disposition of production. The mine is owned and operated by Clayborne Brimhall; address, Fruitland, San Juan County, N. Mex.

This is a new mine, and the main entry has just attained a depth of 100 feet when the mine inspector visited the mine. No data as to production obtained.

## KIRTLAND MINE.

[W. L. Hendrickson, owner and operator.]

The Kirtland mine is located about 2 miles west of the Stevens and Brimhall mines, and upon the same coal seam. The mine is owned and operated by W. L. Hendrickson; address, Fruitland, San Juan County, N. Mex. System of working, drift, entry, room-and-pillar; main drift entry, 300 feet. Number of days mine was operated during fiscal year, 100; average number of men employed, 2; number of tons of coal produced and marketed, 300; estimated value of product



at mine, at \$1 per ton, \$300. The coal is sold to the farmers of the San Juan Valley.

THOMAS MINE.

[W. H. Thomas, owner and operator.]

The Thomas mine is located in sec. 21, T. 32 N., R. 13 W., New Mexico principal base and meridian. W. H. Thomas, owner and operator; address, La Plata, San Juan County, N. Mex. The nearest railroad point is La Boca, on the Denver and Rio Grande Railroad, about 45 miles distant. This coal seam is the thickest coal vein in the Territory. At the Thomas mine it is about 60 feet in thickness, with 40 feet of good marketable coal. The vein at this point is faulted, and the upthrow shows a transverse section of the seam, the dip of which is about 25°. The development consists of a drift entry driven across the dip; length of drift, about 350 feet; natural ventilation. Number of days mine was operated, 175; number of men employed underground, 2; output for fiscal year, 400 tons; estimated value at mine, at \$1.75 per ton, \$700. The product is sold to the farmers of the La Plata Valley and vicinity and at Aztec, N. Mex. Value of improvements during fiscal year, \$250.

ENTERPRISE MINE.

[George W. Jones, owner and operator.]

The Enterprise mine is located in SW.  $\frac{1}{4}$  SE.  $\frac{1}{4}$ , sec. 21, T. 32 N., R. 13 W., New Mexico principal base and meridian. It is located upon the same mammoth seam as the Thomas mine and the Morgan mine. It is owned and operated by George W. Jones; address, Pendleton, San Juan County, N. Mex. Development consists of slope entry 250 feet in length, and a second opening by incline shaft on coal seam, intersecting the drift at the end and at a depth of about 40 feet vertically from the surface. Number of men employed inside and outside, 1; number of days mine was operated during fiscal year, 40; total output of coal, 80 tons; net output, 80 tons; estimated value at mine, at \$1.50 per ton, \$120. The product was sold to the farmers of the La Plata and San Juan valleys, New Mexico.

MORGAN MINE.

In the Morgan mine, about 1 mile distant from the Thomas mine, the same great coal seam, 40 feet in thickness, is being exploited; but operation is suspended at present. This mine is worked intermittently, as coal may be in demand by the farmers.

SAN MIGUEL COUNTY.

San Miguel County has not yet made a record as a coal-producing county for the reason that no coal has yet been marketed, but considerable development work is being done in the coal fields lying within 25 or 30 miles of the eastern boundary line of Santa Fe County. These coal areas have been credited with the Santa Fe County coal measures in the aggregate of coal areas of New Mexico.

## PECOS COAL MINE.

The Pecos coal mine is located in E.  $\frac{1}{2}$  of sec. 5, T. 16 N., R. 12 E., New Mexico principal base and meridian. It lies in the northwestern part of San Miguel County, N. Mex. The ownership of the mine has been a source of litigation for some time past. A good wagon road leads from the mine to Pecos Station, on the Atchison, Topeka and Santa Fe Railroad, a distance of about 10 miles. The coal is a good quality of bituminous and makes excellent coke. Thickness of coal seam, 3 feet; dip of coal seam, 5°. System of working, slope, single cross entry, room and pillar; depth of main slope, 273 feet; cross entry, 173 feet; natural ventilation. This mine has not been opened during the past fiscal year. While all of the other Coal Measures of New Mexico belong to the Cretaceous period, the Coal Measures of the Pecos occur in limestones, presumably of the Carboniferous period.

## EL PORVENIR MINE.

The El Porvenir mine is located in secs. 12 and 13, T. 17 N., R. 14 E., New Mexico principal base and meridian, on the Las Vegas grant, and about 8 miles from Las Vegas, the nearest railroad station. Prospecting with a diamond drill has shown encouraging results. No coal has yet been marketed. About \$4,000 has been invested in machinery and development work.

## SOCORRO COUNTY.

Socorro County ranks fifth among the coal-producing counties of New Mexico. The coal operators of this county have been handicapped by having had to haul their product 13 miles by horse teams to the nearest railroad point, San Antonio station, on the Atchison, Topeka and Santa Fe Railroad. A branch railroad is now being built to connect the mines at Carthage with the main line of the Atchison, Topeka and Santa Fe Railroad, at San Antonio, N. Mex. The road is being built by a company organized for the purpose. The road will be completed and in operation before these pages go to press.

The only coal mines operated in Socorro County are situated in the immediate vicinity of Carthage. The product of these mines is a most desirable quality of fuel for either steam producing or for domestic purposes. Eighteen small coal seams, ranging from 1 inch to 18 inches in thickness, have been discovered by borings in the Carthage field. One vein of workable thickness, 5 feet, has been developed and operated. Upon this seam are located the Hilton, Government, Bernal, and Emerson mines. Socorro County has moved from sixth to fifth in rank among the coal-producing counties of New Mexico, taking precedence of Rio Arriba County by a small margin. The production of coal in Socorro County during the fiscal year ending June 30, 1903, was 29,460 tons, and for the fiscal year ending June 30, 1904, it amounted to 54,901 tons, an increase of 86.3 per cent. With the increased facilities for transportation furnished by the new railroad to the mines, it is safe to predict fully 100 per cent increase of production for the present fiscal year.

## HILTON MINE.

The Hilton mine is located in NE.  $\frac{1}{4}$  sec. 15, T. 5 S., R. 2 E., New Mexico principal base and meridian. It is situated about 12 miles southeast from San Antonio station, on the Atchison, Topeka and Santa Fe Railroad, to which place the product is hauled by wagon, thence shipped by rail to markets in old Mexico, Texas, Arizona, and New Mexico. The property is owned and operated by the Carthage Coal Company, A. H. Hilton, general manager, address, San Antonio, N. Mex.; Robert E. Law, mine superintendent. This mine is located upon the Carthage coal seam, which in this immediate locality is  $4\frac{1}{2}$  feet in thickness; class of coal, bituminous, coking; average dip of coal seam,  $15^{\circ}$ ; system of working, slope, single entry, room and pillar. Depth of main slope, 1,700 feet. The mine is ventilated by an up-cast air shaft. A 50-horsepower steam engine furnishes the haulage power to transport the coal from the partings in the mine to the tippie. Number of men employed outside, 5; number of men employed underground, 18. Nationality of employees, Spanish-speaking natives predominated, with a few Scotch, Italians, and Americans. All employees could read and write, as shown by signatures to vouchers. Number of days mine worked during fiscal year, 300. Total output for fiscal year, 8,100 tons. Number of tons used in operating mine, 100. Net product of mine for fiscal year, 8,000 tons. Estimated value of net product at mine, \$12,000.

The demand for coal from this mine was curtailed 35 per cent in localities which had formerly furnished the market for the coal produced. The oil which came in competition and caused the decrease in demand for the coal came from the wells at Beaumont, Tex., and Bakersfield, Cal. During the past fiscal year the coal from this mine was hauled in wagons 12 miles to the nearest railroad point, at San Antonio, N. Mex., and shipped via Atchison, Topeka and Santa Fe Railroad and connecting lines to El Paso, Tex., old Mexico, and Arizona.

## BERNAL MINE.

[Carthage Coal Company, owner and operator.]

This is a new mine opened by the Carthage Coal Company during the past fiscal year. It lies between the Hilton and Government mines and is located in the west half of SE.  $\frac{1}{4}$  sec. 15, T. 5 S., R. 2 E., New Mexico principal base and meridian. It is owned and operated by the Carthage Coal Company, A. H. Hilton, general manager; Robert McIntyre, superintendent.

The coal produced is a good quality of bituminous coking coal, and very desirable for either steaming or domestic purposes. Thickness of seam, 6 feet; depth of slope, 555 feet; dip of seam,  $12^{\circ}$ ; system of working, single entry, room and pillar; system of ventilation, natural ventilation through two air shafts. A 20-horsepower steam hoist is used to transport cars from the mine partings to the tippie.

Average number of men employed underground, 15; average number of men employed outside, 5; nationality of employees, mostly Spanish-speaking natives of New Mexico, together with Americans from other sections, also Scotch and English, all of whom could read and write, as shown by signatures to vouchers. Number of days mine was operated during fiscal year, 275; total output for fiscal year,



12,140 tons; amount used in operating mine, 140 tons; net product, 12,000 tons; estimated value at mine, \$18,000. The product is marketed in Arizona, Old Mexico, and Texas, and is shipped via Atchison, Topeka and Santa Fe Railroad. A new steam hoisting plant was installed and a tippie built during the past fiscal year.

## GOVERNMENT MINE.

[Carthage Coal Company, owner and operator.]

The Government mine is located in SW.  $\frac{1}{4}$  of NW.  $\frac{1}{4}$  and NW.  $\frac{1}{4}$  of SW.  $\frac{1}{4}$ , sec. 15, T. 5 S., R. 2 E., New Mexico principal base and meridian. It inherits the name of the "Government mine" from the fact that Government troops, camped upon the Rio Grande, worked the mine thirty-five or forty years ago. It is now owned by the Carthage Coal Company; A. H. Hilton, general manager; Robert McKinley, superintendent. The coal is similar in character to the coal of the Emerson and Carthage mines. Thickness of coal seam, 6 feet; dip,  $7^{\circ}$ ; depth of slope, 800 feet. A 50-horsepower steam engine is used for haulage. Air compressor, to run pump and for other necessary uses, will soon be installed. The mine is ventilated by two air shafts; system of working, single entry, room and pillar. Average number of men employed underground, 25; average number of men employed outside, 5; nationality of employees, Spanish-speaking natives of the Territory predominated, together with Scotch and American miners. All of the employees could read and write, as shown by signatures to vouchers. Number of days mine was operated during fiscal year, 275; total product of mine for fiscal year, 16,150 tons; amount used in operating mine, 150 tons; net output of mine, 16,000 tons; estimated value of net output at mine, \$24,000. The coal from this mine is marketed in Arizona, Old Mexico, and Texas. During the year the following improvements were made: 50-horsepower boiler and engine; new tippie; 10 two-room stone houses; eleven-room boarding house; total value of improvements, \$12,000.

## EMERSON MINE.

[E. O. Emerson, J. L. Emerson, E. O. Emerson, jr., and C. B. Allaire, owners.]

The Emerson mine is located in S.  $\frac{1}{2}$  of sec. 9 and N.  $\frac{1}{2}$  of sec. 16, T. 5 S., R. 2 E., New Mexico principal base and meridian. It is operated by Emerson & Allaire; C. B. Allaire, general manager, address, San Antonio, N. Mex.; Robert Duffy, superintendent, address, San Antonio, N. Mex.

The mine is situated about 10 miles southeast of San Antonio station, on the Atchison, Topeka and Santa Fe Railroad, to which point the coal is hauled in wagons and shipped thence by rail to market at El Paso, Tex. The coal is a good quality of bituminous, very good for steam and domestic purposes, and makes an excellent quality of coke. Thickness of coal seam, 6 feet; dip of vein,  $15^{\circ}$ ; system of working, slope, single entry, room and pillar; depth of main slope, 1,300 feet; ventilation, natural, through slope and two air shafts. The power for operation is furnished by a 60-horsepower steam engine, Hendric & Bolthoff, link motion. Average number of men employed underground, 25; average number of men employed outside, 6; nationality of employees, mostly Spanish-speaking natives of

New Mexico and Scotch, of whom all could write, as shown by signatures to vouchers. Number of days mine was operated during fiscal year, 288; output for fiscal year, 18,651 tons; amount used in operating mine during six months' use of steam engine, 150 tons; net product of mine, 18,501 tons; estimated value of net product at mine, at average price of \$1.40 per ton, \$25,901.40. The coal is marketed in Old Mexico principally. During the past fiscal year a 60-horsepower boiler and steam engine were substituted for a 25-horsepower gasoline hoist heretofore in use, and an air compressor, to operate the mine pump, was installed.

*Table showing name of mine, method of working, power used, efficiency in horsepower, and ventilation.*

Name of mine.	Method of working.	Power used.	Efficiency of machinery in horsepower.	Ventilation.
<b>Colfax County:</b>				
Dawson mines Nos. 1, 2, 3, 4, and 5.	Drift, double entry, room and pillar.	Electricity	750	Air shaft.
Willow mines	do.	Steam	260	Exhaust fans
		Electricity and steam.	600	Do.
Dutchman	do.	do.	550	Do.
Sugarite and Climax mines.	Drift, single entry, room and pillar.	Horses		Furnace.
Llewellyn	do.			Air shaft.
Turner	do.			Do.
Honeyfield	do.	Horses		Natural.
<b>Lincoln County:</b>				
Capitan mines Nos. 1 and 2.	Drift, double entry, room and pillar.	Steam	200	Exhaust fan.
Old Abe	Slope, single entry, room and pillar.	Horse whim		Air shaft.
<b>McKinley County:</b>				
Catalpa	Slope, double entry, room and pillar.	Steam	290	Exhaust fan.
Gallup	do.		800	Do.
Weaver	Drift, double entry, rib, and room.	Steam for tippie and fan.	110	Do.
Thatcher	Slope, double entry, room, and pillar.	Steam	274	Do.
Otero	do.	do.	123	Do.
W. A. Clark	do.	Electricity	650	Do.
Rocky Cliff	Drift, single entry, room, and pillar.	Horses		Furnace.
Union	Slope, double entry, room, and pillar.	Steam	20	Do.
Black Diamond	Drift, single entry, room, and pillar.	do.	20	Air shaft.
Casna	Slope, single entry, room, and pillar.	Horses		Do.
<b>Rio Arriba County:</b>				
Monero	do.	Steam	75	Natural.
Kutz	do.	do.	30	Furnace.
McBroom	do.	Horses		Natural.
<b>Santa Fe County:</b>				
Cerrillos Bituminous.	Slope and 2 back slopes, double cross entries, room, and pillar.	Steam and compressed air.	350	Exhaust fan
Cerrillos Anthracite	do.	do.	200	Do.
Anthracite "B" No. 33.	do.	Compressed air.	40	Do.
Block	Slope, single entry, room, and pillar.	Horse whim		Air shaft.
<b>Sandoval County:</b>				
Hagan	Slope and 2 back slopes, double cross entries, room, and pillar.	Steam	30	Do.
Sloan	Slope, single entry, room, and pillar.	do.	50	Natural.
<b>Socorro County:</b>				
Carthage	do.	do.	50	Do.
Government	do.	do.	50	Do.
Emerson	do.	Gasoline engine	25	Do.
Total efficiency in horsepower.			5,547	

*Directory of New Mexico coal mines and management in charge, 1904.*

Name of mine.	Name of owner.	Name of manager or super-intendent.	Post-office.
Colfax County:			
Willow mines, Nos. 1, 2, and 3. Dutchman .....	Raton Coal and Coke Co.	J. Van Houten, vice-presi- dent. William J. Murray, general manager.	Raton, N. Mex.
		Joseph Curron, superin- tendent Willow mines.	Van Houten, N. Mex.
		Bert Lloyd,superintendent Dutchman mine.	Blossburg, N. Mex.
Climax Sugarite .....		Raton Fuel Co. ....	A. L. Hobbs, general man- ager.
Llewellyn .....	Thos. Llewellyn .....	Thomas Llewellyn, super- intendent.	Do.
Turner .....	John F. Turner .....	John F. Turner, superin- tendent.	Do.
Dawson mines, Nos. 1, 2, 3, 4, and 5.	Dawson Railway and Coal Co.	W. P. Thompson, general manager.	Dawson, N. Mex.
Honeyfield .....	Honeyfield Bros. ....	Al French, superintendent Honeyfield Bros. ....	Raton, N. Mex.
Lincoln County:			
Capitan mines, Nos. 1 and 2.	New Mexico Fuel Co.	W. P. Thompson, general manager. James McCartney,superin- tendent.	Capitan, N. Mex.
Old Abe .....	Old Abe Mining Co.	John Y. Hewitt, general manager.	White Oaks, N. Mex.
McKinley County:			
Gallup .....	American Fuel Co.	Geo. W. Bowen, president ...	E. and C. Building, Denver, Colo.
Weaver .....		Thomas Pattison, division superintendent.	Gallup, N. Mex.
Catalpa .....		Hugh McGinn, mine super- intendent.	Gibson, N. Mex.
Clark Coal Co. ....	Clark Coal Co. ....	W. L. Bretherton, agent ...	Clarkville, N. Mex.
Otero .....	Caledonian Coal Co.	Alex. Bowie, general man- ager.	Gallup, N. Mex.
Thatcher .....		John Stewart,superintend- ent.	
Rocky Cliff .....	Stephen Canavan ...	Stephen Canavan, general manager.	Do.
Union .....	Union Coal Co. ....	Wm. McVicker, general manager.	Do.
Black Diamond .....	Black Diamond Coal Co.	John Sharp, general man- ager.	Do.
Casna .....	Andrea Casna .....	Andrea Casna,superintend- ent.	Do.
Rio Arriba County:			
Monero mines, Nos. 1 and 2.	Rio Arriba Coal Co.	J. H. Crist, general manager	Monero, N. Mex.
McBroom .....	George W. Kutz .....	George W. Kutz, general manager.	Lumberton, N. Mex.
Santa Fe County:			
Cerrillos Bitumious.	Rocky Mountain Coal and Iron Co.	John T. Kobler, president ..	Boston Building, Denver, Colo.
Cerrillos Anthra- cite and Anthra- cite B No. 36.		James Lamb, superintend- ent.	Madrid, N. Mex.
Block Coal .....		Estate of Leonard Lewisohn.	Richard S. McCaffrey, agent
Una del Gato .....	E. B. Field, owner; New Mexico Fuel and Iron Co., oper- ator.	W. S. Hopewell, president. George T. Peart, general manager.	Santa Fe, N. Mex. Hagan, Sandoval County, N. Mex.
Socorro County:			
Hilton .....	Carthage Coal Co.	A. H. Hilton, general man- ager; Robert Law, super- intendent Hilton mine.	San Antonio, N. Mex.
Government .....		Robert McKinley, superin- tendent Government mine.	
Bernal .....		Robert McIntyre, superin- tendent Bernal mine.	
Emerson .....	Emerson & Allaire ..	C. B. Allaire, general man- ager.	Do.
San Juan County:			
Thomas .....	W. H. Thomas .....	W. H. Thomas,superintend- ent.	Pendleton, N. Mex.
Morgan .....	George Morgan .....	George Morgan, superin- tendent.	Do.
Stevens .....	E. S. Young .....	Thomas Evans, lessee and operator.	Fruitland, N Mex.
Jones .....	George W. Jones ....	George W. Jones, owner and operator.	Pendleton, N. Mex.
Brimhall .....	Clayborne Brimhall.	Clayborne Brimhall, owner and operator.	Fruitland, N. Mex.
Hendrickson .....	W. L. Hendrickson ..	W. L. Hendrickson, owner and operator.	Do.



*List of fatal accidents in coal mines of New Mexico during fiscal year ending June 30, 1904.*

Date of accident.	Name of victim.	Name of mine.	Cause of accident.
1903.			
Sept. 4	Miguel Salazar	Dawson, No. 1, Dawson, N. Mex.	Suffocated by smoke from mine fire.
4	D. P. Jones	do	Do.
4	Serafo Rengal	do	Do.
16	Geo. Goldie	Dawson, No. 3, Dawson, N. Mex.	Fall of draw slate.
Oct. 19	R. D. Green	Dawson, No. 2, Dawson, N. Mex.	Fall of coal.
Nov. 7	Steve Deleanor	Gallup mine, Gibson, N. Mex.	Struck by flying coal from shot.
28	Nick De Nardo	Dawson, No. 5, Dawson, N. Mex.	Fall of rock.
Dec. 19	Antinque Arellano	Dawson, No. 3, Dawson, N. Mex.	Fall of coal.
21	K. Sasai	Dawson, No. 1, Dawson, N. Mex.	Fall of rock.
1904.			
Feb. 2	John Chapman	Willow, No. 1, Van Houten, N. Mex.	Do.
26	Robert Benham	Cerrillos Anthracite, B 33 mine.	Do.
Mar. 8	Alex Chima	No. 1 mine, Coalora, N. Mex.	Fall of slate.
28	Louis Fantaconi	Monero, No. 1, Monero, N. Mex.	"Went back on" shot too soon.
30	John Schienshang	No. 1 mine, Coalora, N. Mex.	Fall of coal.
Apr. 16	J. L. McBroom	Clark Coal Co., Clarkville, N. Mex.	Fall of rock from roof of entry.

There was reported to me as United States mine inspector the foregoing detailed 15 accidents during the fiscal year ending June 30, 1904. A summary of the causes to which the fatalities were attributed is as follows: By fall of rock, 10; suffocated by smoke in mine fire, 3; struck by flying coal from shot, 1; went back to examine unexploded shot, 1.

*Number of tons mined compared with lives lost.*

County.	Tons of coal mined.	Lives lost.	Number of tons of coal mined for each life lost.
Colfax	837,158	9	93,017
Lincoln	96,382	2	48,191
McKinley	537,812	2	268,906
Rio Arriba	42,000	1	42,000
Sante Fe	66,838	1	66,838
Sandoval	970		
San Juan	1,840		
Socorro	55,041		
Total	1,638,041	15	109,202

Total number of tons mined in New Mexico during fiscal year, 1,638,041; total number of lives lost during fiscal year, 15; average number of tons mined for each life lost, 109,202, as against 1 life lost for each 79,972 tons of coal mined during preceding fiscal year.

## NONFATAL ACCIDENTS.

Eighty-six nonfatal accidents were reported to this office during the fiscal year. As I know of accidents of this degree having occurred at other mines than those reporting, and am certain that this is an incomplete list, I believe it would be an injustice to the managers of the mines where these accidents occurred to publish the list, while others would make a more creditable showing who have declined to report such accidents, and there is no specific requirement to do so in the law, hence I refrain from reporting details for publication.

## NEW MINES OPENED DURING FISCAL YEAR ENDING JUNE 30, 1904.

Six new mines were opened during the past fiscal year, the most important of these being two new slopes which are being sunk upon the Weaver mine in McKinley County. One of these slopes has already attained a depth of about 1,000 feet. The Sloan Coal Company, in Sandoval County, have done considerable development work during the year. The Honeyfield mine, in Colfax County, and the Kirtland and Enterprise mines, in San Juan County, came in as small producers during the year.

## OPERATION SUSPENDED.

Operation was temporarily suspended upon several mines while the demand was slack during the summer months, but only one mine was indefinitely suspended. The mine upon which operation was thus suspended, the Gallup mine, was closed on account of a fire in the old abandoned workings which has been burning for twelve years past, but recently began to give off noxious gases into the part of the mine in operation. The fire was walled off and the mine securely closed.

*Production of coke in New Mexico for the fiscal year ending June 30, 1904.*

At the ovens of the Dawson Fuel Company, Dawson, Colfax County,  
N. Mex.:

Number of tons.....	35,800
Estimated value, per ton of 2,000 pounds.....	\$3
Value of product at the ovens.....	\$107,400

The coal from which this coke was made was mined from the Dawson mines.

This shows an increase of the production of coke amounting to 9,447 tons, although no coke was made at the Raton Coal and Coke Company's ovens at Gardiner, N. Mex., which have heretofore been operated for the preceding ten years. It is very probable these ovens will be operated during the ensuing fiscal year and the production in the Territory largely increased.

Table showing statistics of the coal mining industry in the Territory of New Mexico for the fiscal year ending June 30, 1904.

Name of mine.	Number of men employed underground.	Number of men employed outside.	Total number of men employed.	Number of boys employed underground.	Number of boys employed outside.	Total number of boys employed.	Number of days mine operated.	Total output in tons of 2,000 pounds.	Amount used in operating mine.	Net product.	Approximate price per ton of 2,000 pounds.	Estimated value of net product at the mine for fiscal year.	Increase of net product over preceding fiscal year.	Decrease in net product in comparison with preceding fiscal year.	Character and class of coal mined and shipped.
<i>Colfax County.</i>															
Raton Coal and Coke Co.'s mines:															
Dutchman mine.....	53	20	73	1	2	3	170	38,126	2,412	35,714	\$1.15	\$41,071.00	-----	96,332	Bituminous, coking, screened mine run.
Willow mines, Nos. 1, 2, and 3.....	219	38	257	4	6	10	296	343,612	3,157	340,455	1.15	391,523.25	175,340	-----	Do.
Dawson Fuel Co.'s mines, Nos. 1, 2, 3, 4, and 5.....	300	155	455	7	5	12	280	443,398	10,322	433,076	1.20+	519,691.20	193,097	-----	Do.
Raton Fuel Co.'s mines:															
Chinax mine.....	4		4				308	4,451	-----	4,451	1.00	4,451.00	680	-----	Do.
Sugarite mine.....	4		4				308	3,321	-----	3,321	1.00	3,321.00	430	-----	Do.
Ll-wellyn mine.....	2		2				300	2,000	-----	2,000	1.00	2,000.00	-----	1,000	Do.
Turner mine.....	2		2				1	1,350	-----	1,350	1.00	1,350.00	-----	-----	Do.
Honeyfield mine.....	3		3				120	1,000	-----	1,000	1.25	1,250.00	1,000	-----	Do.
Total.....	587	213	800	13	15	28	-----	837,158	15,891	821,267	-----	924,557.45	370,547	97,332	
<i>Lincoln County.</i>															
New Mexico Fuel Co.'s mines:															
Capitan mines, Nos. 1 and 2.....	86	22	108	2		2	308	94,882	3,887	90,995	2.00	181,990.00	-----	4,005	Do.
Old Abe coal mine.....	2	1	3				186	1,500	-----	1,500	2.50	3,750.00	-----	596	Do.
Total.....	88	23	111	2		2	-----	96,382	3,887	92,495	-----	185,740.00	-----	4,601	
<i>McKinley County.</i>															
American Fuel Co.'s mines:															
Weaver mine.....	190	143	333	8	3	11	275	323,805	4,206	319,597	1.38+	444,174.83	-----	52,430	Lignite, noncoking, screened mine run.
Gallup mine.....	41	35	76				86	21,417	637	20,780	1.34+	28,046.06	20,780	-----	Do.
Caledonian Coal Co.'s mines:															
Otero mine.....	40	10	50				185	27,854	1,800	26,054	1.60+	41,781.00	2,901	-----	Do.
Thatcher mine.....	28	5	33				55	4,736	600	4,136	1.71+	7,104.00	4,136	-----	Do.
Clark Coal Co.'s mine.....	98	38	136	12	12	24	287	132,000	6,000	126,000	1.46+	185,000.00	21,000	-----	Do.



Rocky Cliff mine.....	20	1	21				18,000		1.40	25,200.00		6,000	Do.
Black Diamond mine.....	10	6	16				10,000		1.50	15,000.00		5,000	Do.
Total.....	427	238	665	20	15	35	537,812	13,245		746,305.89	35,817		
<i>Rio Arriba County.</i>													
Kutz mine.....	13	3	16				12,000	(a)	1.60	19,200.00	2,400		Bituminous, coking, screened mine run.
Rio Arriba Coal Co.'s mines:													
McBroom mine.....	7	2	9				4,000		1.00	4,000.00		500	Do.
Moneto mine.....	25	7	32	1		1	26,000	800	1.50+	38,000.00	1,200		Do.
Total.....	45	12	57	1		1	42,000	800		61,200.00	3,600	500	
<i>Santa Fe County.</i>													
Rocky Mountain Coal and Iron Co.'s mines:													
Cerrillos Anthracite "28".....	24	20	44	2	10	12	19,129	4,736	3.22+	46,441.16		13,968	Anthracite, various sizes.
Cerrillos Anthracite "B. 33".....	7	1	8				3,518	2,260	3.10+	13,332.23		4,960	Do.
Cerrillos Bituminous "27".....	52	19	71	6		6	42,131	2,882	1.75+	68,264.35		6,488	Bituminous, screened mine run.
Total.....	83	40	123	8	10	18	66,838	8,894		184,474.73		25,386	
<i>Sandoval County.</i>													
Hagan mine.....	10	10	20				970	200	1.50	1,155.00	770		Semibituminous, white ash, noncoking.
<i>San Juan County.</i>													
Stevens mine.....	3		3				1,000		1.25	1,225.00		40	Semibituminous, non- coking.
Kirkland mine.....	2		2				300		1.00	300.00	300		Do.
Thomas mine.....	2		2				400		1.75	700.00		300	Do.
Enterprise mine.....	1		1				80		1.50	120.00	80		Do.
Total.....	8		8				1,840			2,445.00	380	340	
<i>Socorro County.</i>													
Carthage Coal Co.'s mines:													
Hilton mine.....	18	5	23				8,100	100	1.50	12,000.00		12,000	Bituminous, coking, screened mine run.
Bernal mine.....	15	5	20				12,140	140	1.50	18,000.00	12,000		Do.
Government mine.....	25	5	30				16,150	150	1.50	24,000.00	12,000		Do.
Emerson mine.....	25	6	31				18,651	150	1.40	25,901.40	13,416		Do.
Total.....	83	21	104				55,041	540		79,901.40	37,416	12,000	

<sup>a</sup> Slack used.

Table showing statistics of the coal mining industry in the Territory of New Mexico, etc.—Continued.

## SUMMARY OF TOTALS BY COUNTIES, AS PER HEADINGS AT TOPS OF COLUMNS.

County.	Number of men employed underground.	Number of men employed outside.	Total number of men employed.	Number of boys employed underground.	Number of boys employed outside.	Total number of boys employed.	Number of days mine operated.	Total output in tons of 2,000 pounds.	Amount used in operating mines.	Net product.	Approximate price per ton of 2,000 pounds.	Estimated value of net product at the mine for fiscal year.	Increase of net product over preceding fiscal year.	Decrease of net product in comparison with preceding fiscal year.	County percentage of net output of New Mexico for fiscal year.	Number of lives lost in mines in each county.	Number of tons of coal produced for each life lost.
Culiacan	587	213	800	13	15	28	—	837,158	15,801	821,267	—	\$924,557.45	273,215	—	51.50	9	—
Lincoln	88	23	111	2	—	2	—	46,382	3,887	32,495	—	185,740.00	—	4,601	5.80+	2	—
McKinley	427	238	665	20	15	35	—	537,812	13,245	524,567	—	746,905.89	—	4,613	32.89+	2	—
Rio Arriba	45	12	57	1	—	1	—	42,000	800	41,200	—	61,200.00	3,100	—	2.38+	1	—
Santa Fe	83	40	123	8	10	18	—	66,838	8,894	57,944	—	184,474.73	—	25,386	3.63+	1	—
Sandoval	10	10	20	—	—	—	—	970	200	770	—	1,155.00	770	—	—	—	—
San Juan	8	—	8	—	—	—	—	1,840	—	1,840	—	2,445.00	80	—	.01+	—	—
Socorro	83	21	104	—	—	—	—	55,041	540	54,501	—	79,901.40	25,416	—	3.41+	—	—
Total New Mexico	1,331	557	1,888	44	40	84	—	1,638,041	43,457	1,594,584	—	2,185,779.47	302,581	34,610	99.82	15	109,202

The net production of the coal mines of New Mexico for the fiscal year ending June 30, 1903, was 1,326,803 tons of 2,000 pounds per ton. As shown by the adjoining table the net production for the fiscal year ending June 30, 1904, was 1,594,584 tons, an increase of 20.18 per cent.

## ANALYSIS OF NEW MEXICO COALS.

## M'KINLEY COUNTY.

*Analysis of coal from Catalpa mine, near Gallup, McKinley County, N. Mex.*

[Owned and operated by Colorado Fuel and Iron Company.]

	Per cent.
Moisture -----	6.66
Volatile matter -----	40.13
Fixed carbon -----	45.56
Ash -----	7.65
Total -----	100.00

*Analysis of coal from Weaver mine, at Gibson, near Gallup, McKinley County, N. Mex.*

[Owned and operated by Colorado Fuel and Iron Company.]

No. 3 seam :	Per cent.
Moisture -----	9.13
Volatile matter -----	38.45
Fixed carbon -----	49.45
Ash -----	2.99
Total -----	100.00
Moisture -----	8.23
Volatile matter -----	40.61
Fixed carbon -----	45.17
Ash -----	5.99
Total -----	100.00

The Gallup mine is being operated upon the same coal seams as the Weaver mine—viz, Nos. 3 and 5—and analysis of coal is similar to that given above for those seams.

## COLFAX COUNTY.

*Analysis of coal and coke produced from Raton Coal and Coke Company's mines, at Raton, Colfax County, N. Mex.*

	Per cent.
Water -----	0.75
Volatile matter -----	34.40
Fixed carbon -----	56.93
Mineral ash -----	7.92
Total -----	100.00

Coke -----	64.85
Character of coke, very strong and tough; color of ash, very light ocher; character of ash, soft and light.	
Sulphur (as sulphide) -----	0.016
Sulphur (as sulphate) -----	.022
Phosphorus -----	.014
Specific gravity -----	1.291
One cubic foot weighs ----- pounds -----	88.690

Analysis of mineral ash :

Silica -----	44.16
Alumina -----	39.28
Oxide of iron -----	2.95
Calcium oxide -----	7.41
Magnesium oxide -----	3.27
Sulphate of calcium -----	.41
Alkalies and loss -----	2.52
Total -----	100.00



*Analysis of coal produced from Raton Coal and Coke Company's Willow mines,  
at Van Houten, Colfax County, N. Mex.*

	Per cent.
Moisture -----	3.61
Volatile matter -----	35.55
Fixed carbon -----	51.73
Sulphur -----	.63
Ash -----	8.48
Total -----	100.00

*Analysis of coal produced from Raton Coal and Coke Company's Dutchman  
mine, at Blossburg, Colfax County, N. Mex.*

	Per cent.
Moisture -----	1.28
Volatile matter -----	33.90
Fixed carbon -----	56.68
Sulphur -----	.65
Ash -----	7.49
Total -----	100.00

*Analysis of coal from Dawson Fuel Company's mines, at Dawson, Colfax  
County, N. Mex.*

	Per cent.
Water -----	1.32
Volatile matter -----	37.47
Fixed carbon -----	52.50
Sulphur -----	.21
Ash -----	8.50
Total -----	100.00

SANTA FE COUNTY.

*Analysis of coal from the Cerrillos bituminous mine of the Colorado Fuel and  
Iron Company, at Madrid, Santa Fe County, N. Mex.*

[Made by W. D. Church, December 2, 1893.]

	Per cent.
Water -----	2.00
Volatile matter -----	39.00
Fixed carbon -----	53.76
Mineral ash -----	5.24
Total -----	100.00

*Coke ----- 59.00*

Character of coke, strong and tough; color of ash, light-yellowish  
gray; character of ash, soft and light.

Sulphur (as sulphide) -----	.010
Sulphur (as sulphate) -----	.022
Phosphorus -----	.006
Specific gravity -----	1.410
One cubic foot weighs ----- pounds	88.135

*Analysis of mineral ash:*

Silica -----	26.93
Alumina -----	32.41
Oxide of iron -----	3.96
Calcium oxide -----	24.68
Magnesium oxide -----	10.32
Calcium sulphate -----	.21
Alkalies and loss -----	1.49

Total ----- 100.00

As no analysis of recent date was obtainable, the above was copied from report of former United States mine inspector.

## LINCOLN COUNTY.

*Analysis of coal from New Mexico Fuel Company's mines, at Capitan, Lincoln County, N. Mex.*

	Per cent.
Water -----	0. 75
Volatile matter -----	41. 25
Fixed carbon -----	47. 00
Ash -----	11. 00
Total -----	100. 00
Sulphur -----	. 735

*Analysis of coke from New Mexico Fuel Company's mines.*

Mr. Hills, the geologist of the Colorado Fuel and Iron Company, who examined the property, constructed a coke oven of adobe bricks and coked some of the coal from the Akers seam, which gave the following analysis:

	Per cent.
Water -----	1. 450
Volatile matter -----	3. 900
Fixed carbon -----	76. 825
Ash -----	17. 825
Total -----	100. 000
Sulphur -----	. 611

## RIO ARriba COUNTY.

Analysis of coals from the two seams of the Amargo coal measures, operated by the Rio Arriba Coal Company, at Monero, Rio Arriba County, N. Mex., made by Prof. J. F. Kemp, of Columbia University, New York, gave the following results:

*Analysis of coal from upper seam.*

	Per cent.
Water -----	2. 27
Volatile hydrocarbons -----	38. 67
Fixed carbon -----	52. 08
Ash -----	6. 98
Total -----	100. 00

*Analysis of coal from lower seam.*

	Per cent.
Water -----	2. 59
Volatile hydrocarbon -----	39. 35
Fixed carbon -----	53. 06
Ash -----	5. 00
Total -----	100. 00

Professor Kemp adds in a letter to the mine inspector: "These coals thus prove to be regular bituminous coals and do not appear to be lignites in any respect."

## SOCORRO COUNTY.

*Analysis of coal from Carthage mine No. 3, Carthage Coal Company.*

	Per cent.
Moisture -----	Trace.
Volatile matter -----	37. 30
Fixed carbon -----	54. 85
Ash -----	7. 00
Sulphur -----	. 85
Total -----	100. 00

*Analysis of coal from Emerson mine.*

[Owned and operated by Emerson &amp; Allaire.]

	Per cent.
Moisture -----	1. 00
Volatile matter -----	39. 40
Fixed carbon -----	35. 20
Ash -----	6. 40
Total -----	100. 00

## LAWS GOVERNING THE WORKING OF COAL MINES IN THE TERRITORIES.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,* That in each organized and unorganized Territory of the United States wherein are located coal mines, the aggregate annual output of which shall be in excess of one thousand tons per annum, the President shall appoint a mine inspector, who shall hold office until his successor is appointed and qualified. Such inspector shall, before entering upon the discharge of his duties, give bond to the United States in the sum of two thousand dollars, conditioned for the faithful discharge of his duties.

SEC. 2. That no person shall be eligible for appointment as mine inspector under section 1 of this act who is not either a practical miner or mining engineer, and who has not been a resident for at least six months in the Territory for which he shall be appointed; and no person who shall act as land agent, manager, or agent of any mine, or as mining engineer, or be interested in operating any mine in such Territory, shall be at the same time an inspector under the provisions of this act.

SEC. 3. That it shall be the duty of the mine inspector provided for in this act to make careful and thorough inspection of each coal mine operated in such Territory, and to report at least annually upon the condition of each coal mine in said Territory with reference to the shafts, the number of shafts or slopes for ingress or egress, the character and condition of the machinery for ventilating such mines, and the quantity of air supplied to same. Such reports shall be made to the governor of the Territory in which such mines are located and a duplicate thereof forwarded to the Secretary of the Interior, and in case of an unorganized Territory directly to the Secretary of the Interior.

SEC. 4. That in case the said mine inspector shall report that any coal mine is not properly constructed or not furnished with reasonable and proper machinery and appliances for the safety of the miners



and other employees, it shall be the duty of the governor of such organized Territory, it shall be the duty of the Secretary of the Interior, to give notice to the owners or managers of said coal mine that the said mine is unsafe, and notifying them in what particular the same is unsafe and requiring them to furnish or provide such additional machinery, slopes, entries, means of escape, ventilation, or other appliances necessary to the safety of the miners and other employees within a period to be in said notice named, and if the same be not furnished as required in said notice it shall be unlawful after the time fixed in such notice for the said owner or managers to operate said mine.

SEC. 5. That in all coal mines in the Territories of the United States the owners or managers shall provide at least two shafts, slopes, or other outlets separated by natural strata of not less than one hundred and fifty feet in breadth, by which shafts, slopes, or outlets distinct means of ingress and egress shall always be available to the persons employed in said mine. And in case of the failure of any coal mine to be so provided it shall be the duty of the mine inspector to make report of such fact, and thereupon notice shall issue as provided in section four of this act, and with the same force and effect.

SEC. 6. That the owners or managers of every coal mine at a depth of one hundred feet or more shall provide an adequate amount of ventilation of not less than fifty-five cubic feet of pure air per second, or thirty-three hundred cubic feet per minute, for every fifty men at work in said mine, and in like proportion for a greater number, which air shall, by prompt appliances or machinery, be forced through such mine to the face of each and every working place, so as to dilute and render harmless and expel therefrom the noxious or poisonous gases; and all workings shall be kept clear of standing gas.

SEC. 7. That any mine owner or manager who shall continue to operate a mine after failure to comply with the requirements of this act and after the expiration of the period named in the notice provided for in section four of this act shall be deemed guilty of a misdemeanor and shall be fined not to exceed five hundred dollars.

SEC. 8. That in no case shall a furnace shaft be used, or for the purposes of this act be deemed an escape shaft.

SEC. 9. That escape shafts shall be constructed in compliance with the requirements of this act within six months of the date of the passage hereof, unless the time be extended to exceed one year from the passage of this act.

SEC. 10. That a metal speaking tube from the top to the bottom of the shaft or slope shall be provided in all cases, so that conversation may be carried through the same.

SEC. 11. That an approved safety catch be provided and sufficient cover overhead on every carriage used in lowering or hoisting persons. And the mine inspector shall examine and pass upon the adequacy and safety of all such hoisting apparatus.

SEC. 12. That no child under twelve years of age shall be employed in the underground workings of any mine, and no father or other person shall misrepresent the age of anybody so employed. Any person guilty of violating the provisions of this section shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be fined not to exceed one hundred dollars.

SEC. 13. That only experienced and competent and sober men shall be placed in charge of hoisting apparatus or engines. And the maximum number of persons who may ascend or descend upon any cage or hoisting apparatus shall be determined by the mine inspector.

SEC. 14. That it shall be lawful for any inspector to enter and inspect any coal mine in his district and the works and machinery belonging thereto at all reasonable times, but so as not to impede or obstruct the working of the mine; and to make inquiry into the state of the mine, works and machinery, and the ventilation and mode of lighting the same, and into all matters and things connected with or relating to the safety of the persons employed in or about the same, and especially to make inquiry whether the provisions of this act are complied with; and the owner or agent is hereby required to furnish means necessary for such entry, inspection, examination, and inquiry, of which the said inspector shall make an entry in the records of his office, noting the time and material circumstances of the inspection.

SEC. 15. That in all cases of fatal accidents a full report shall be made by the mine owner or manager to the mine inspector, said report to be in writing and made within ten days after such death shall have occurred.

SEC. 16. That as a cumulative remedy, in case of the failure of any owner or manager of any mine to comply with the requirements contained in the notice of the governor of such Territory or the Secretary of the Interior, given in pursuance of this act, any court of competent jurisdiction, or the judge of such court in vacation, may, on the application of the mine inspector, in the name of the United States, and supported by the recommendation of the governor of said Territory or the Secretary of the Interior, issue an injunction restraining the further operation of such mine until such requirements are complied with; and in order to obtain such injunction no bond shall issue.

SEC. 17. That wherever the term "owner or manager" is used in this act, the same shall include lessees, or other persons controlling the operation of any mine. And in case of the violation of this act by any corporation, the managing officers and superintendents, and other managing agents of such corporation, shall be personally liable and shall be punished as provided in the act for owners and managers.

SEC. 18. That the mine inspectors provided for in this act shall each receive a salary of two thousand dollars per annum, and their actual traveling expenses when engaged in their duties.

SEC. 19. That whenever any organized Territory shall make or has made provision by law for the safe operation of mines within such Territory, and the governor of such Territory shall certify said fact with a copy of the said law to the Secretary of the Interior, then and thereafter the provisions of this act shall no longer be enforced in such organized Territory, but in lieu thereof the statute of such Territory shall be operative in lieu of this act.

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AN ACT To amend an act entitled "An act for the protection of the lives of miners in the Territories."

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That section six of*

the act entitled "An act for the protection of the lives of miners in the Territories" be amended by striking out "thirty-three hundred" and inserting "five thousand," so as to read:

SEC. 6. That the owners or managers of every coal mine shall provide an adequate amount of ventilation of not less than eighty-three and one-third cubic feet of pure air per second, or five thousand cubic feet per minute, for every fifty men at work in said mine, and in like proportion for a greater number, which air shall, by proper appliances or machinery, be forced through such mine to the face of each and every working place, so as to dilute and render harmless and expel therefrom the noxious and poisonous gases. Wherever it is practicable to do so the entries, rooms, and all openings being operated in coal mines shall be kept well dampened with water to cause the coal dust to settle, and that when water is not obtainable at reasonable cost for this purpose accumulations of dust shall be taken out of the mine, and shall not be deposited in way places in the mine where it would be again distributed in the atmosphere by the ventilating currents: *Provided*, That all owners, lessees, operators of, or any other person having the control or management of any coal shaft, drift, slope, or pit in the Indian Territory, employing twenty or more miners to work in the same, shall employ shot firers to fire the shots therein. Said shots shall not be fired to exceed one per day; at twelve o'clock noon in cases where the miners work but half a day, and at five o'clock in the evening where the mine is working three-quarters or full time, and they shall not be fired until after all miners and other employees working in said shafts, drifts, slopes, or pits shall be out of same. The violation of this act shall constitute a misdemeanor, and any person convicted of such violation shall pay a fine of not exceeding five hundred dollars.

Approved, July 1, 1902.

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DEPARTMENT RULINGS ON UNITED STATES MINE-INSPECTION LAWS.

DEPARTMENT OF THE INTERIOR,  
*Washington, November 21, 1892.*

SIR: I have the honor to acknowledge the receipt, by reference from honorable Acting Secretary Bussey, dated the 12th instant, of a communication from the Acting Commissioner of the General Land Office, transmitting the report of Robert Forrester, mine inspector, at Castlegate, Utah Territory, relative to the condition of the Deseret Coal and Coke Company's mine, situated at Connellsville, Emery County, and leased by William Hans Carlston, of Fairview, Sanpete County, in said Territory.

The inspector reports that said Carlston employs at said mine 4 men, that the vein of coal is 11 feet thick, and that from 1,000 to 1,400 tons of coal are taken from said mine each year; that said coal is hauled out by a mule, and the mine is worked from six to nine months during the year.

The inspector further says:

There is no escapement way provided. There is a return air way, but no air was passing through the mine when I made my examination. The connection between the air way and the workings is a small aperture 20 inches square, and



this is entirely too small. I would suggest that there be a furnace or other means employed to create a current of fresh air through the mine. In all other respects the mine is operated in compliance with the requirements of the Federal coal-mine laws.

In view of the foregoing the inspector requests the Acting Commissioner of the General Land Office to direct said Carlston—

to provide the necessary improvements required by law, to wit:

1. The enlargement of the return air way.
2. The installing of some method to produce the circulation of a sufficient quantity of air for the number of miners that may be employed.
3. The construction of an escapement way separated from the entrance to the mine by 150 feet of natural strata.

By said reference I am requested to give an "opinion as to what action should be taken by this Department, under the act of March 3, 1891 (an act for the protection of the lives of miners in the Territories), on the within report and, if any, the character thereof."

The requirements of the act of March 3, 1891 (26 Stat., 1104), have been heretofore considered by the Department, and the duties of mine inspectors thereunder were prescribed in the circular dated July 12, 1892, prepared by the Acting Commissioner of the General Land Office and approved by you (copy inclosed herewith).

In said circular, after mentioning the provisions of sections 1 and 2 of said act, it is stated:

That it shall be the duty of the mine inspector provided for in this act to make careful and thorough inspection of each coal mine operated in such Territory, and to report at least annually upon the condition of each coal mine in said Territory with reference to the appliances for the safety of the miners, the number of air or ventilating shafts, the number of shafts or slopes for ingress or egress, the character and condition of the machinery for ventilating such mines, and the quantity of air supplied to same. Such reports shall be made to the governor of the Territory in which such mines are located and a duplicate thereof forwarded to the Secretary of the Interior, and in the case of an unorganized Territory directly to the Secretary of the Interior.

The fourth section is quoted, as follows:

That in case the said mine inspector shall report that any coal mine is not properly constructed or not furnished with reasonable and proper machinery and appliances for the safety of the miners and other employees, it shall be the duty of the governor of such organized Territory, it shall be the duty of the Secretary of the Interior, to give notice to the owners or managers of said coal mine that the said mine is unsafe, and notifying them in what particular the same is unsafe, and requiring them to furnish or provide such additional machinery, slopes, entries, means of escape, ventilation, or other appliances necessary to the safety of the miners and other employees within a period to be in said notice named, and if the same be not furnished as required in such notice it shall be unlawful after the time fixed in such notice for the said owners or managers to operate said mine.

A cursory reading of said section 4 alone might indicate that both the governor and the Secretary of the Interior were required to notify the mine owners or managers in an organized Territory that their mine was unsafe and require them within a specified time to make the necessary improvements; but when the whole act is considered it is manifest that the notice required in said section 4 must be given by the governor of the "organized Territory," if the mine is situated therein and the law is applicable thereto, and when the Territory is unorganized the notice must be given by the Secretary of the Interior.

This view is strengthened by an examination of the sixteenth section of said act, providing "a cumulative remedy in case of the failure of any owner or manager of any mine to comply with the require-

ments contained in the notice of the governor of such Territory, or the Secretary of the Interior given in pursuance of this act, and authorizing the mine inspector to apply to "any court in vacation \* \* \* to issue an injunction restraining the further operation of such mine until such requirements are complied with."

It may also be observed that the nineteenth section of said act makes it inoperative in any organized Territory which has made, or shall make, provision by law for the safe operation of mines therein, "and the governor of such Territory shall certify said fact, with a copy of the law, to the Secretary of the Interior."

I am informed that no certification of the governor of Utah, as required by said act, has been filed in this Department, but I find that said Territory has made provision by law for the safe operation of mines therein by the acts of its legislature approved March 10, 1892, copies of which are inclosed herewith.

From the report of said inspector it is evident that the manager of said mine has failed to comply with section 5 of said act of March 3, 1891, and since Utah is an organized Territory I am of the opinion, and so advise you, that a copy of said report should be sent to the governor of Utah for proper action thereon, and he should also be furnished with a copy of said circular, and his attention specially called to section 19 of said act, in order that he may, if he so desires, make the certificate required therein.

The papers submitted are herewith returned.

Very respectfully,

GEO. H. SHIELDS,  
*Assistant Attorney-General.*

The SECRETARY OF THE INTERIOR.

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DEPARTMENT OF THE INTERIOR,  
ASSISTANT ATTORNEY-GENERAL'S OFFICE,  
*Washington, March 2, 1893.*

SIR: I have the honor to acknowledge the receipt, through your reference of January 17, of certain correspondence with the governors of the Territories of Utah and New Mexico relative to the act of Congress approved March 3, 1891 (26 Stat. L., 1104), entitled "An act for the protection of the lives of miners in the Territories," in which my attention is invited thereto for my opinion "as to whether the laws of Utah and New Mexico make such provision for the safe operation of mines within said Territories as is contemplated by the act of March 3, 1891, and would warrant the governors in certifying the same to the Secretary of the Interior in the manner prescribed by section 19 of said act, and if so what action, if any, should be taken by the Department in the premises."

The inspector appointed under the act of 1891, Mr. Robert Forrester, in his report relative to the condition of the Deseret Coal and Coke Company's mine, situated at Connellsville, Utah, recommended that the owner of said mine be required to make certain specified improvements.

Upon said report a question arose as to who should give the notice to the owner, the Secretary of the Interior or the governor of the Territory.

In my opinion of November 21, 1892, I held that, being an organized Territory, the required notice should be given by the governor; but, as the act might be inoperative in the Territory under section 19 of the act, I was under the opinion, and so advised you, that "a copy of said report should be sent to the governor of Utah for proper action thereon, and he should be furnished with a copy of said circular, and his attention specially called to section 19 of said act, in order that he may, if he so desires, make the certificate required therein."

Acting thereunder, a letter was addressed to the governor of Utah on December 9, 1892, in which his attention was invited to the nineteenth section of the act of March 3, 1891 (supra).

Under date of December 19, 1892, the governor replied "that the law of Utah was not understood to be a substitute for or to cover the subjects referred to in the act of Congress." He then goes on to show that the act of the legislature of Utah does not cover all mines; that it provides only for escapement shafts and recognizes the existence and continued performance of the duties of the mine inspector appointed under the act of Congress.

This would seem to show conclusively that the Territory did not desire to supersede the act of Congress in this matter by the legislation referred to.

From the language of the reference some doubt must have existed as to whether you can overrule the action of the governor, or, in other words, review the laws of the Territory and determine whether the laws of the Territory do supersede the act of Congress, and if so found what action should be taken.

In my opinion the only purpose of the nineteenth section of the act was to provide a way by which the Territory might supersede the act of Congress.

Under this section this could only be done by the governor certifying that the legislature has made due provision by law for the safe operation of the mines in its own Territory. Of this matter the Territory is its own judge, and until such fact is certified to the Secretary of the Interior by the governor, accompanied by a copy of the law or laws on the subject, the act of Congress will remain operative.

In the present case, acting upon the report of Mr. Forrester, the governor having been furnished with a copy of the report, the duties of this Department are at an end. Under the fourth section of the act it becomes the duty of the governor to notify the owner of the mine in what particular the same is unsafe and to require that the same be remedied within a time to be fixed by him.

Herewith are returned the papers referred by you.

Very respectfully,

GEO. H. SHIELDS,  
*Assistant Attorney-General.*

THE SECRETARY OF THE INTERIOR.

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DEPARTMENT OF THE INTERIOR,  
ASSISTANT ATTORNEY-GENERAL'S OFFICE,  
*Washington, April 6, 1893.*

SIR: I am in receipt, through reference of April, 1 1893, of letter from John C. Spears, inspector of mines for the Territory of New



Mexico, for an opinion as to the proper construction of section 6 of the act of March 3, 1891 (26 Stat., 1104), entitled "An act for the protection of the lives of miners in the Territories." Said section provides—

That the owners or managers of every coal mine at a depth of 100 feet or more shall provide an adequate amount of ventilation of not less than 55 cubic feet of pure air per second or 3,300 cubic feet per minute for every 50 men at work in said mine, and in like proportion for a greater number, which air shall by proper appliances or machinery be forced through such mine to the face of each and every working place, so as to dilute and render harmless and expel therefrom the noxious or poisonous gases; and all workings shall be kept clear of standing gas.

From the letter referred, it appears that a difference of opinion exists between the mine inspector and the owners of mines in said Territory as to the proper construction of the expression "every coal mine at a depth of 100 feet or more." This expression clearly limits the operation of the section, and it becomes necessary to determine how the measurement shall be made.

The mine owners claim that this refers to the perpendicular measurement—that is, it means 100 feet of surface by perpendicular measurement—while the mine inspector is of the opinion that it refers to the distance from the surface following the drift, slope, or shaft of the mine.

From a review of the matter, I am of the opinion that the construction placed upon the section by the mine inspector is the proper one.

This section provides for an adequate amount of ventilation, and it would seem that the length of the shaft or slope would be the basis of the determination when considering the necessity for proper ventilation and not the distance to the face of the workings by perpendicular measurement. The distance from the surface by the slope may be 3,000 feet or more, and by the perpendicular measurement the same may be less than 100 feet. If the perpendicular measurement was the criterion, this act would have no application, and as the act is for the protection of the lives of miners it would seem that a mine with a slope of 3,000 feet or more should be properly ventilated for the protection of the lives of miners therein employed.

I can see no good reason why the ventilation should be measured by the perpendicular measurement, and am therefore of the opinion, as before expressed, that the length of the shaft or slope is the criterion in the matter of determining the operation of this section.

Attached hereto is the letter referred.

Very respectfully,

GEO. H. SHIELDS,  
*Assistant Attorney-General.*

THE SECRETARY OF THE INTERIOR.

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DEPARTMENT OF THE INTERIOR,  
OFFICE OF THE ASSISTANT ATTORNEY-GENERAL,  
*Washington, May 9, 1893.*

SIR: On the 1st instant the Acting Secretary, Hon. George Chandler, asked for my opinion as to the proper construction of sections 5 and 9 of the act of Congress for the protection of the lives of miners in the Territories, approved March 3, 1891. The exact question touching which he asks my opinion in the construction of the afore-

said sections of the act of 1891 is presented by a letter addressed to Hon. George Chandler, Acting Secretary of the Interior, by Luke W. Bryan, mine inspector for the Indian Territory, dated April 13, 1893, in which he reports that sections 5 and 9 of said act have not been complied with by several mining companies therein named in respect to the erection of shafts, slopes, and outlets, and he propounds the following question:

Will you kindly advise me whether they [meaning the owners and managers of mines] are entitled to any time beyond that prescribed in the act aforesaid for the erection of shafts, slopes, or outlets as means of escape from coal mines?

Section 5 of said act is as follows:

That in all coal mines in the Territories of the United States the owners or managers shall provide at least two shafts, slopes, or other outlets, separated by natural strata of not less than 150 feet in breadth, by which shafts, slopes, or outlets distinct means of ingress or egress shall always be available to the persons employed in said mine. And in case of the failure of any coal mine to be so provided it shall be the duty of the mine inspector to make report of such fact, and thereupon notice shall issue as provided in section 4 of this act and with the same force and effect.

This section prescribes the duty imposed upon the owners or managers of coal mines as to the erection of means of escape from coal mines for the benefit of miners, and it also prescribes the distance that such shafts, slopes, or outlets shall be separated one from the other.

Section 9 is as follows:

That escape shafts shall be constructed in compliance with the requirements of this act within six months from the date of the passage hereof, unless the time shall be extended by the mine inspector; and in no case shall said time be extended to exceed one year from the passage of this act.

It will be seen that section 9, just quoted, requires that the escape shafts provided for in section 5 shall be constructed in compliance with the requirements of this act of 1891 within six months from the date of its passage, and if not constructed within that time the mine inspector may give such reasonable time as in his judgment is proper, but in no case to extend beyond one year from the date of the passage of this act. This act was approved March 3, 1891. It is therefore apparent that the mine inspector can not extend to the owners or managers of mines any further time in which to comply with section 5 of said act of 1891. The latter clause of section 5 reads as follows:

And in case of the failure of any coal mine to be so provided it shall be the duty of the mine inspector to make report of such fact, and thereupon notice shall issue, as provided in section 4 of this act, and with the same force and effect.

Section 4 of this act provides that the mine inspector shall report to the Secretary of the Interior any failure on the part of any owners or managers of any mines to comply with the requirements of said act of 1891, and when such report is received by the Secretary of the Interior he shall give notice to such owners and managers, informing them in what respect they have failed to comply with the act of Congress aforesaid, and direct that they furnish or provide such shafts, entries, or means of escape as are required by said act within a period to be prescribed by him in said notice; and if such shafts, outlets, or means of escape are not provided as required by such notice, then it shall be unlawful, after the time fixed in the notice, for such owners or managers to operate such mine. In my opinion it is very clear

that the mine inspector has no power or authority over the subject except to report the failure on the part of any owners or managers of coal mines to comply with the requirements of said act; and the Secretary of the Interior alone can prescribe the additional time which he deems proper within which the law can be complied with in a notice served upon the owners or managers of mines, as hereinbefore stated.

The report of the mine inspector is that certain mining companies therein named have failed to comply with the law in respect to the distance given between the escape shafts erected by them and the main shafts in the respective mines, and it is in this respect that the owners or managers of said mines are delinquent.

I am of the opinion that this report of Inspector Bryan furnishes sufficient data upon which the Secretary of the Interior can act and serve notice upon the delinquent owners or managers of the coal mines therein named, as is provided in section 4 of said act of March 3, 1891.

The papers submitted are herewith returned.

Very respectfully,

JOHN I. HALL,  
*Assistant Attorney-General.*

The SECRETARY OF THE INTERIOR.

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DEPARTMENT OF THE INTERIOR.  
ASSISTANT ATTORNEY-GENERAL'S OFFICE,  
*Washington, June 13, 1893.*

SIR: I am in receipt of a letter, dated June 5, 1893, from Robert Forrester, inspector of mines for Utah, inclosing a communication, dated May 23, 1893, addressed to him by Mr. F. A. Mitchell, relative to the act of Congress of March 3, 1891 (Stat., 1105), entitled "An act for the protection of the lives of miners." Said letter and communication you have submitted to me for an opinion upon the points referred to therein.

The tenth section of said act requires "That a metal speaking tube from the top to the bottom of the shaft or slope shall be provided in all cases, so that conversation may be carried on through the same;" and the questions upon which an opinion is asked are—

1. Is this section applicable to slopes through which no one is allowed to travel while the trips are running?

2. Can a telephone or electric-bell system be substituted for the metal speaking tube required by law?

It seems to me the language of said section is so clear and unambiguous that there is no room for any other construction than that indicated by the plain letter of the law, which in specific terms provides that the means of communicating from the top to the bottom of the shaft or slope must be by conversation through "a metal speaking tube," even though other means of communication may be superior thereto; and this section would be equally applicable to all slopes, whether anyone is allowed to travel while the trips are running or not.

Very respectfully,

JOHN I. HALL,  
*Assistant Attorney-General.*

The FIRST ASSISTANT SECRETARY OF THE INTERIOR.



DEPARTMENT OF THE INTERIOR,  
OFFICE OF THE ASSISTANT ATTORNEY-GENERAL.*Washington, October 9, 1902.*

SIR: The act of July 1, 1902 (Public, No. 222), amended section 6 of the act of March 3, 1891 (26 Stat., 1104), entitled "An act for the protection of the lives of miners in the Territories," and added thereto the following:

*Provided*, That all owners, lessees, operators of, or any other person, having the control or management of any coal shaft, drift, slope, or pit in the Indian Territory, employing twenty or more miners to work in the same, shall employ shot firers to fire the shots therein. Said shots shall not be fired to exceed one per day—at twelve o'clock noon in some cases where the miners work but half a day and at five o'clock in the evening when the mine is working three-quarters or full time, and they shall not be fired until after all miners and other employes working in said shafts, drifts, slopes, or pits shall be out of same. The violation of this act shall constitute a misdemeanor, and any person convicted of such violation shall pay a fine of not exceeding five hundred dollars.

By your reference I am asked for an opinion as to the meaning of the clause in this proviso, to wit: "Said shots shall not be fired to exceed one per day."

Shot firing in coal mines consists in exploding powder or other substance in such way as to loosen the coal and thereby expedite its removal from the mine. By reference to the annual report of the mine inspector for the Indian Territory to the Secretary of the Interior for the year ending June 30, 1901, it appears that this shot firing is a dangerous proceeding, and that some of the companies doing a mining business in said Territory have rules in force which do not permit the firing of shots until the working day is over and the miners have left the mines. It is shown by said report, on the other hand, that some of these operators do not employ shot firers at all, the shots being fired indiscriminately by the miners themselves. This is evidently a dangerous practice, sometimes causing explosions resulting in loss of life, and is the mischief which the statute was designed to correct. But unless the danger from firing shots in mines were so great as to warrant its prohibition altogether, it would be absurd to limit it to one shot per day. Such limitation would in many cases amount to a practical inhibition against operating the mines. A special report on this matter by a mine inspector for the Indian Territory, July 24, 1902, shows that in some of the larger mines in the Indian Territory the production is from 500 to 1,000 tons per day, and that in such mines it is necessary to fire from 200 to 300 shots per day, and that to restrict such a mine as this to one shot per day would limit the production of the mine to two or three tons per day.

Viewing the statute in the light of these considerations, I am of the opinion that it was not the intention of Congress to limit shot firing in these mines to one shot per day, but rather to limit or restrict this firing to one stated or fixed time in each day—that is, "at twelve o'clock noon in cases where the miners work but half a day, and at five o'clock in the evening when the mine is working three-quarters or full time," and even then not until "after all miners and other employees working in said shafts, drifts, slopes, or pits shall be out of same." To give to the act the effect evidently intended by Congress the phrase "one per day" should read "once per day." The danger

to the miners does not lie in the number of shots fired, but in the time when they are fired; and if fired at a fixed and generally understood time after the working day is over and after all miners and other employees are out of the mine, it is not a matter of public concern how many shots are fired in the work of facilitating the removal of coal therefrom.

Very respectfully,

WILLIS VAN DEVANTER,  
*Assistant Attorney-General.*

THE SECRETARY OF THE INTERIOR.

Approved, October 9, 1902.

THOS. RYAN, *Acting Secretary.*

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#### RECOMMENDATIONS.

I have heretofore recommended and again urge that the United States law "for the protection of the lives of the miners in the Territories" be amended to render all persons employed about a coal mine amenable to the law and liable to prosecution for the breach of its provisions. Again I would call attention to this matter. A large majority of the accidents in coal mines is due to the gross negligence of the miner himself—negligence bred from constant familiarity with dangers incident to his vocation.

The operator is bound by the law to furnish every reasonable protection to his employee by maintaining proper conditions in and about the mine, and it is the duty of the mine inspector to see that these conditions are maintained, and if the law be not complied with to prosecute the operators and bring suit for injunction to suspend operation of the mine.

But the employee enjoys immunity from punishment for violation of the law. He may by his gross carelessness or negligence endanger the life or person of his fellow-workmen or his own with impunity, the only recourse being the suspension of operation of his working place and at most his discharge. In the intervals between the mine inspector's visits, or between the daily inspections of the pit boss, the delinquent miner may maintain a dangerous condition in his working place; but if restrained by the wholesome knowledge that he was amenable to the law for its violation it is hardly probable that he would act in such wanton manner as now when free of such restraint.

A majority of the fatal accidents which have occurred during my incumbency in the office were the result of carelessness on the part of the victims or their fellow-employees.

The principal object to which the mine inspector should give his attention is not the careful investigation of accidents which have occurred, but he should give his prime effort to the prevention of accidents. It is, therefore, not with a desire to enforce the law by prosecution of the derelict miner that I urge the recommendation for this amendment, but from the earnest belief that the restraining influence exerted by this proposed amendment of the law would cause



the miner to be more careful, and thus eliminate a large percentage of the danger from his necessarily hazardous vocation.

I would again recommend that a commission, composed of experts in the art of explosives, be appointed for the purpose of experimenting and producing a flameless explosive for use in coal mines, an explosive which could be manufactured at reasonable cost and which would be safe and convenient to use.

The recent experiences with dust explosions in the mines of the Southern and Western States, as well as in the Territories, have shown that the prevention of these terrible accidents deserves the attention of the Federal Government.

Believing that the use of flameless explosives would prevent dust explosions, I therefore offer the foregoing recommendations for the appointment of a commission for the purpose stated.

It is also recommended that restrictions be placed upon the practice which now generally obtains throughout the Territory of "shooting off the solid," otherwise blasting coal without cutting or undermining, to give a line of vantage or weakness for the shot to break to.

Shooting off the solid is the cause of the majority of blown-out shots, and these shots are responsible for the resultant dust explosions.

It is true that there are some coal seams so small that there is little opportunity for coal cutting or undermining, and in these mines there should be a close inspection of all holes drilled, by the pit boss or other trustworthy official, before the holes are loaded or fired, and all holes which are too strong should be condemned and the miner forbidden to shoot them.

But in the majority of mines there is ample room for cutting or mining the coal, yet but little such mining is done. Nor would proper preparation of his face or heading be a hindrance or hardship to the miner. He would break much more coal with each shot, where his coal was properly mined or cut; thus he would get full value out of the powder used, as well as from labor expended upon drilling his hole, a large percentage of both of which are lost when shooting off the solid.

Again, the danger from falling top is lessened, because where coal is cut or undermined the timbers and props can be set up close to the face of the working, without being knocked out each time a shot is fired, as happens when shooting off the solid, the force of the shot being projected out into the room or entry instead of toward the floor or side, as it would be if the coal were cut or undermined. Because the miner knocks out his props with these strong solid shots he is loath to set props up close to the face of his working and risks his life under dangerous top, from the falling of which a majority of fatal accidents in coal mines occur.

Thus it will be seen that the pernicious practice of shooting off the solid is responsible not only for a great many dust explosions and consequent loss of life, but to this cause is also attributable much of the lax method of timbering and resulting accidents to the miners who dig coal in this manner. It may be said that many of the men now employed in coal mining do not understand how to properly make a cutting or mining. Then all the more reason to insist upon hearing how and why it should be done, as the man who is so little



experienced in coal cutting is surely not to be trusted to judge of the proper strength of a hole, nor with the use of explosives.

I would also recommend that section 10 of the United States law, governing the operation of coal mines in the Territories, and which is here recited ("Sec. 10. That a metal speaking tube from the top to the bottom of the shaft or slope shall be provided in all cases, so that conversation may be carried on through the same"), be amended by inserting after the word "tube," on the first line, the following words: "or a telephone line," leaving it optional with the operator to provide either method of communication.

In connection therewith the following opinion was rendered by the Assistant Attorney-General, Hon. John I. Hall, in June, 1893, and ruling of the Department has been in accordance with the subjoined written opinion:

DEPARTMENT OF THE INTERIOR,  
ASSISTANT ATTORNEY-GENERAL'S OFFICE,  
*Washington, June 13, 1893.*

SIR: I am in receipt of a letter, dated June 5, 1893, from Robert Forrester, inspector of mines for Utah, inclosing a communication, dated May 23, 1893, addressed to him by Mr. F. A. Mitchell, relative to the act of Congress of March 3, 1891 (26 Stat., 1105), entitled "An act for the protection of the lives of miners." Said letter and communication you have submitted to me for an opinion upon the points referred to therein.

The tenth section of said act requires "That a metal speaking tube from the top to the bottom of the shaft or slope shall be provided in all cases, so that conversation may be carried on through the same;" and the questions upon which an opinion is asked are:

(1) Is this section applicable to slopes through which no one is allowed to travel while the trips are running?

(2) Can a telephone or electric-bell system be substituted for the metal speaking tube required by law?

It seems to me that the language of said section is so clear and unambiguous that there is no room for any other construction than that indicated by the plain letter of the law, which in specific terms provides that the means of communicating from the top to the bottom of the shaft or slope must be by conversation through "a metal speaking tube," even though other means of communication may be superior thereto, and this section would be equally applicable to all slopes whether anyone is allowed to travel while the trips are running or not.

Very respectfully,

JOHN I. HALL,  
*Assistant Attorney-General.*

The FIRST ASSISTANT SECRETARY OF THE INTERIOR.

While the opinion of an eminent attorney can not be gainsaid by the mine inspector, yet it is clearly apparent that what was contemplated and intended by the makers of the law was the establishment of a good and sufficient means of communication between the bottom of the mine and the pit mouth.

As the telephone is a much better means of communication and less liable to be broken, as well as easier and more quickly repaired, it would seem wrong that the absurdity of excluding the better system of communication should be allowed to remain as the law and the ruling thereunder.

It is therefore respectfully recommended that the United States laws governing the operation of coal mines be amended in these particulars.

## UNITED STATES LAND COMMISSION.

[A. M. LEESON, *Clerk.*]

This Commission was provided for in the act of Congress of June 21, 1898, and consists of the governor, the United States surveyor-general, and the solicitor-general of the Territory.

Meetings have been held regularly on the first Monday of each month; also numerous special meetings held at call of chairman when business demanded.

The lands selected during the past year have been entirely for the benefit of water reservoirs for irrigating purposes and improvement of the Rio Grande in New Mexico, as all other lands granted to the several Territorial institutions by act of Congress of June 21, 1898, have been previously selected and such selections approved by the honorable Secretary of the Interior.

The following amount of land has been selected and located on the ground in the several United States land districts by Mr. David M. White, the locating agent, by direction of the Commission:

Improvement of Rio Grande in New Mexico:	Acres.
Santa Fe land district -----	6,914.27
Las Cruces land district -----	33,712.20
Water reservoirs for irrigating purposes:	
Santa Fe land district -----	2,672.90
Roswell land district -----	76,166.86
Clayton land district -----	114,007.03
Total -----	233,473.26

Leaving still to be selected about 157,000 acres.

The character of this land is almost entirely dry grazing land, although there has been about 6,000 acres of timber land selected.

## UNITED STATES GEOLOGICAL SURVEY—RECLAMATION SERVICE.

[W. M. REED, *Engineer.*]

While it is impossible to give a synopsis of the annual report to be submitted later to the chief engineer, I will give a short account of the work already accomplished in this Territory.

Work was commenced in 1903 by a small party on the Hondo River near Roswell, N. Mex. This work was carried on through the summer in a small way, but during the winter a large party was put to work and the surveys completed in April, 1904.

This work has been favorably recommended for construction, and work will probably begin in the early autumn.

The Penasco River has also been examined and reported upon. No action by the honorable Secretary has been taken.

The Pecos River has been examined in a preliminary way, and the Urton Lake project, about 60 miles north of Roswell, has been recommended for a final survey. This survey has been made, but no final report will be made until after borings with a diamond drill have been made to determine the foundations, etc., and until the hydrographic department has determined the amount of available water for storage purposes.

The Las Vegas section has been examined and surveyed, and a report will be made as soon as some other data can be obtained.

At the same time the Las Vegas project was being surveyed several other small projects were examined in a preliminary way, with the expectation of taking up more detailed work in the future.

The Canadian watershed has had a reconnaissance survey, for the purpose of determining the portions to be surveyed in detail later.

The San Juan watershed has also had a reconnaissance and is recommended for detailed surveys later.

The Rio Grande, in the southern part of the Territory, had a field party at work during the winter of 1903-4 making accurate surveys, and at the present time an investigation of the Rio Grande as a whole is being made with a view to future work.

In explanation, I might say that New Mexico is one of the four districts in which work can be carried on during the winter. It is the policy to reserve these districts for winter work, when many new men that are employed in the North during the summer can be used in these districts, thereby equitably distributing the work of the service over the entire arid section. The next winter months will see more work done in New Mexico by the reclamation service than ever before.

NEW MEXICO SECTION OF THE CLIMATE AND CROP SERVICE OF  
THE WEATHER BUREAU, U. S. DEPARTMENT OF AGRICULTURE  
(COOPERATING WITH THE NEW MEXICO WEATHER SERVICE.)

[CHARLES E. LINNEY, *Section Director.*]

The work of the section has continued during the year without change in its plan of organization. The Territorial assembly, in February, 1903, appropriated \$500 per annum to cover the cost of printing the several publications; all other expenses, including salaries, central office, equipment of stations, stationery, and supplies, are borne by the national bureau. The appropriation is available until 1905 (November), but it is probable that the increasing demand for the weekly, monthly, and annual reports will exhaust the allowance previous to that date. The national bureau, through its representative in charge of the regular weather bureau station at Santa Fe, has continued to exercise supervision over the work.

*Voluntary stations of observation.*—At the close of the year there were 40 stations in active operation, 3 in abeyance, and 2 newly established, awaiting equipment—a slight increase over the previous year. There were 4 full voluntary stations established (Rociada, San Rafael, Torrance, and the W. S. ranch, near Maxwell City), all desirable points of observation. Two additional stations (Rincon and Vermejo) are in process of equipment. The stations at Bluewater, Espanola, and Littlefield ranch were discontinued, and those at Aztec and Socorro are in process of transfer to nearby localities. The equipment is generally excellent, although there are a few stations which are still using the old-style rain gauges and recommendation will shortly be made to the Chief of the United States Weather Bureau that these be furnished with the new combined rain and snow gauge. Action will also be taken to make full reporting stations of Bell ranch, Deming, and Lordsburg.



*Dissemination of forecasts.*—The daily forecasts from Denver are received at the three principal cities of the Territory at Government expense. The Pecos Valley Railroad also receives the forecast and transmits it to the agents of its line without expense to the Government. In the northern part of the Territory, through the cooperation of the Colorado Telephone Company and its connecting lines, the forecasts are given to 67 localities. Flag display is maintained at Las Vegas, the messages are posted at Albuquerque, and card forecasts are distributed at Santa Fe. The local afternoon papers also give farther and much greater distribution to the forecasts.

Special warnings are sent to three additional points by telegraph at Government expense; these are Springer, Socorro, and Roswell, while emergency warnings are sent to 40 prominent towns and villages within the Territory.

*Publications.*—The regular publications of the section are the Weekly Crop Bulletin (during the crop season), the Snowfall Bulletin (during the latter part of winter), the Monthly Report (throughout the year), and the Annual Summary (at the close of the calendar year). These have been continued with increased success. The issue of the weekly bulletin has been enlarged to more than 700 copies, all the newspapers and most of the post-offices of the Territory being upon the mailing list. The bulletin is also sent to the principal daily newspapers throughout the West and Middle West, the three largest daily papers of the Territory giving publication to the bulletin in full, thus reaching probably 20,000 readers. The reports of more than 75 correspondents, fairly representing the agricultural and stock-raising sections, are used in the preparation of this bulletin.

The Snowfall Bulletin is issued at the close of January, February, and March, 125 correspondents cooperating in furnishing the information therein contained regarding the snowfall in the higher mountains districts and the condition of the water supply. These bulletins are also given wide publication and are becoming more valuable year by year as greater demand is made upon the irrigation waters of the Territory. The issue of this bulletin has been increased to 600 copies.

The Monthly Report and Annual Summary are the climatic publications of the section, and follow in size and style the standard adopted by the Weather Bureau, giving thus in detail the climatic conditions of a considerable portion of the Territory. The issue of the monthly report has been increased to 700 copies, and that of the Annual Summary to 800, the latter forming such a complete report that it is used in answering a great many requests for climatic data.

*General remarks.*—The gradual extension of settlers into parts of the Territory heretofore thinly settled begins to admit of much better selection and distribution of our voluntary stations of observation, and efforts will be made to have all parts fairly represented before the close of the coming year. Much encouragement has been met in seeking new observers and in better equipping those now in operation. Four stations were officially inspected during the year.

The demands upon the central office at Santa Fe for climatic data are constantly increasing and it is fortunate that we are able to answer these by means of our monthly and annual publications, thus giving unbiased answers and placing before the many inquirers reli-

able data for almost every district of the Territory. Valuable use has also been made of our data by the Bureau of Immigration.

#### STOCK AND CROP CONDITIONS DURING 1903.

January was a dry and windy month, with temperature slightly above normal. The precipitation averaged about one-third of the normal amount, and very little moisture was stored. Stock were in good condition, except in the east-central counties, where it was difficult to obtain water, as surface water was gone and wells in many places were dry.

February was a cold and wet month, the temperature averaging about 6° below normal. The precipitation was fully a third more than the normal fall, and a large amount of snow fell in the mountains for water supply. Until the 24th of the month there was great lack of water in the northeastern counties, but heavy snow on that and the succeeding day relieved the situation. Throughout the Territory the soil was apparently in good condition for early grass. At the close of the month stock were in fair condition, although there had been some loss from the storms, especially on the northeastern ranges; shrinkage had also resulted from the steady cold.

March proved favorable, with temperature and precipitation above normal. Farm lands were generally in good condition for early spring work; wheat seeding began, and some plowing and cleaning up were accomplished. Stock in northeastern districts were not in good condition, but losses were less than usual, and the outlook was excellent for early grass. In some southern districts, notably in Lincoln County, the weather was very dry and the lack of feed and water caused heavy stock losses. Irrigation water was abundant at the close of the month, from the heavy snows in the mountains.

April was a cold, dry, and windy month, and vegetation made slow growth. A general frost on the 30th caused great damage to fruit in northern and central counties, but fortunately the lower Rio Grande and Pecos valleys escaped. The dryness was serious in Lincoln County, planting was difficult, and loss of stock heavy. Grass made slow growth. The lambing season was under way, and a satisfactory increase was reported.

Cold nights, windy days, and dryness characterized May, a general drought being threatened. Large areas had been seeded on dry farming lands, and these rapidly dried out; even irrigated fields deteriorated because of the failure of water in localities. Vegetation made slow growth; water was scarce on the ranges, and the prairies were bare, causing considerable loss of cattle. The lambing season, however, proved fairly successful. The month closed with general rains, which kept up during the first two decades of June, and it proved to be a cold, wet month. A marked change resulted in the condition of crops; grass on the ranges grew rapidly and stock responded quickly. Vegetation, while greatly revived by the rains, grew rather slowly, owing to the cold weather of the first part of the month, but the warmth of the last decade caused more rapid growth. The cold, wet weather resulted in the loss of many lambs and ewes; shearing was delayed, and the calf increase on western ranges was light. Toward the close of the month apricots, early peaches, and



some early apples were ripening in southern orchards and cherries in northern.

The usual rainy season did not set in during July, and it was an unusually dry month. The showers were very local in character and mostly confined to the higher northern districts. Ranges, however, continued excellent from the rains of June. Dry farming lands got a good start and were not affected by the lack of rainfall until toward the close of the month, when corn was dwarfed and badly wilted. Irrigation water was also running low, ranges drying fast, and stock water failing, although stock continued in good condition. The harvest of wheat was about completed in northern counties, with fair yield. Second crop alfalfa was harvested in good condition, but with irregular yield, and irrigated crops were generally doing well. Peaches, pears, plums, and early apples were ripening in northern orchards. Grasshoppers caused considerable damage in the Taos and upper Rio Grande valleys.

August continued unfavorable for crops and ranges, owing to high temperature and deficient rainfall, although in the southwestern part of the Territory torrential rains fell, causing floods and great damage to villages and towns, railroads, crops, and farm lands. In the mountain districts local showers aided the flow of streams and gave a fair supply of water for irrigation, but the prairies, especially in the northeast part, showed a marked deficiency in rainfall, stock water was low, and grass browning and curing rapidly; stock, however, remained in good condition.

The temperature averaged slightly below normal during September, although there was but one notable cool period—that of the 16th to 18th—when light to killing frosts occurred in northern districts and at the higher altitude stations. Tender vegetation only was injured, and no general damage resulted. The precipitation of the month was above the normal for the Territory as a whole, although there was a great deficiency in east-central and northeast counties. Colfax and Union especially suffered because of less rainfall (for the month) than in many years. Wells and springs failed in these counties, and stock water was very scarce. Prairie grass, while short, cured well and stock were generally in good condition, but the outlook for winter feed was discouraging. Late apples and peaches were gathered, and, while the yield was irregular, the quality was good.

Clear skies prevailed during October, with nearly normal temperature but deficient rainfall, except in the extreme northeastern counties. Ranges were short, but the favorable weather allowed the grass to cure well and stock continued in good condition. Water was becoming scarce at the close of the month, especially in south-central districts. The dryness continued during November and December, feed and water becoming very scarce on the ranges, and streams falling unusually low, even the mountain streams failing from lack of heavy snows in the higher altitudes. Water holes dried up and springs and wells quite generally failed. The favorable weather otherwise, however, prevented stock losses, and herds and flocks were generally in good condition, although some loss of sheep was reported from central counties.

The year as a whole, while not a failure, was not as profitable to the stock and farming interests as the average year in the Territory.



## KILLING FROSTS, 1903.

[The date in the table is that on which the last temperature of 32° or lower was recorded in the spring and the first fall to 32° or lower in the autumn, excepting those marked with an asterisk (\*). The asterisk indicates that the observer designated this date as that of the last or first killing frost.]

	Last of spring.	First of autumn.		Last of spring.	First of autumn.
Alamogordo .....	Apr. 18	Oct. 31*	Fort Wingate .....	May 27	Sept. 12*
Albert .....	Apr. 30*	Oct. 23	Galisteo .....		Oct. 15
Albuquerque .....	Apr. 13	Sept. 17	Gallinas Springs .....		Oct. 12
Alma .....	June 2	Oct. 24*	Hot Springs .....	May 1	
Arabela .....	Apr. 30*	Oct. 4*	Las Vegas .....	do	Oct. 4*
Bell ranch .....		Oct. 31*	Los Lunas .....	Apr. 13	
Carlsbad .....	Mar. 30	Oct. 16	Luna .....	May 30	Sept. 15
Cloudcroft .....		Sept. 17*	Mesilla Park .....	Mar. 24	Oct. 20
Dorsey .....	May 28	Sept. 14*	Mountainair .....	May 25	Sept. 17*
Eagle Rock ranch .....	June 2	Oct. 16*	Raton .....	May 7	Oct. 14
Engle .....	Apr. 29	Oct. 16	Roswell .....	Apr. 30*	Oct. 16*
Fort Bayard .....	Apr. 28	Oct. 15*	San Marcial .....	Mar. 24	Oct. 16
Fort Stanton .....	May 27	Sept. 17	Santa Fe .....	Apr. 30*	Oct. 31*
Fort Union .....	July 4*	Sept. 17*	Taos .....	May 24	Sept. 16

## Climatological data for the year 1903.

[The minus sign ( - ) means below zero; Tr., trace of precipitation.]

Stations.	Counties.	Elevation, feet.	Temperature in degrees Fahrenheit.					Precipitation in inches.						Number rainy days.	Sky.			Prevailing direction of wind.		
			Length of record, years.	Annual mean.	Highest.	Date.	Lowest.	Date.	Length of record, years.	Total for the year.	Greatest monthly.	Month.	Least monthly.		Month.	Total snowfall.	Number clear days.		Number partly cloudy days.	Number cloudy days.
Alamogordo	Otero	4,300	2		109	July 8	8	Feb. 17	2	13.03	1.48	August	0	December	8.5	39	222	102	41	W.
Albert	Union	4,700	14	56.4	101	July 25	-6	Feb. 16	19	5.83	5.90	June	0	(e)	20.0	22	226	139	10	SW.
Albuquerque	Bernalillo	5,200	29	54.1	99	(c)	4	do	14	2.48	2.48	do	0	(d)	4.5	24	216	139	10	SW.
Aima	Socorro	5,500	10	102	102	July 29	6	Feb. 4	10	2.91	2.91	September	0	(a)	3.0					W.
Arabela	Lincoln	5,800	2	55.1	97	do	8	Feb. 16	8	12.98	6.81	June	0	(a)	15.5	29	240	97	28	SE.
Aztec	San Juan	5,590	9						4											W.
Bell Ranch	San Miguel	4,221							8	13.87	5.00	June	0	December	15.0	45	294	55	16	W.
Cambray	Luna	3,122	9	63.5	105	July 25	-2	Feb. 16	4	8.02	4.55	August	0	(e)	5.5	33	192	87	86	W.
Carlsbad	Eddy	8,650	2		78	July 23	-2	Mar. 1	2	8.05	4.01	June	0	November	4.5	16	283	61	21	W.
Clondroft	Otero	4,331							9											W.
Deming	Luna	6,500	2	48.5	92	(g)	-10	Feb. 16	20	9.09	3.32	do	0	(f)	6.0	27	264	39	60	W.
Dorsey	Coffax	6,000	6	47.2	91	Aug. 6	-12	Mar. 1	6	16.08	8.60	do	0	January	21.7	54	201	101	63	SW.
Eagle Rock Ranch	Union	4,750	9			June 29	2	Dec. 31	2	14.90	5.34	do	0	November	43.5	64	290	148	17	SW.
Engle	Sierra	6,040	29	55.1	103	June 28	6	Feb. 3	3	12.33	3.87	do	0	(c)	7.9	56	290	82	23	N.
Fort Bayard	Grant	6,151	2	50.5	93	(h)	-21	Feb. 16	2	9.52	3.41	August	0	do	11.2	52	277	46	42	W.
Fort Stanton	Lincoln	6,835	45	48.4	97	Aug. 4	-21	Feb. 15	45	14.82	6.69	do	0	do	17.0	57	262	40	63	SW.
Fort Union	Mora	6,835	45	48.4	97	Aug. 4	-21	Feb. 15	45	14.82	6.69	do	0	do	17.0	57	262	40	63	SW.
Fort Wingate	McKinley	6,649	40	48.2	89	(i)	-5	Feb. 4	40	10.34	1.82	August	0	do	18.4	45	229	102	34	SW.
Fruitland	San Juan	4,800	7					Dec. 7	4				0	(a)						W.
Gage	Luna	4,480							4				0	(f)						W.
Galisteo	Santa Fe	6,074	10		92	July 22	3	Feb. 16	10		3.10	June	0							W.
Gallinas Springs	San Miguel	3,272	19		101	July 25	-10	do	19		3.17	June	0	(a)						W.
Golden	Santa Fe	7,000						Mar. 1						November						SW.
Hot Springs	San Miguel	6,767	5	90	96	(j)	-8	Mar. 1		14.81	3.57	August	0	November	19.5	61	225	112	28	SW.
Las Vegas	do	6,384	2	49.0	96	July 29	-16	Feb. 16	2	4.04	0.93	September	0	(k)	Tr.	14	266	68	31	W.
Lordsburg	Grant	4,245	8					Feb. 16	8	5.60	2.05	June								W.
Los Lunas	Valencia	4,900	1	59.0	95	July 13	-14	Feb. 7	8	10.29	3.65	August	0	(a)	2.0	37	257	73	35	W.
Luna	Socorro	4,900	8		95	(l)	-14	Feb. 7	16	10.29	3.65	June	0							W.
Mesilla Park	Dona Ana	3,500	16	59.0	103	June 29	9	Feb. 4	16	10.29	3.65	June	0	(a)	2.0	37	257	73	35	W.

Mountainair	Valencia	6,547	2	49.4	95	(m)	-12	Feb. 16	2	13.01	2.96	do	0	November	38.2	41	289	59	17	SW.
Raton	Colfax	6,622	9		99	May 18	-5	Feb. 15	9		9.44	do	Tr.	October			166	42	157	SW.
Roswell	Chaves	3,370	10		97	June 21	-7	Feb. 16	10		4.37	do	0	(n)						SW.
San Marcial	Socorro	4,554	8	58.7	108	(o)		do	11											S.
Santa Fe	Santa Fe	7,013	25	48.7	89	(m)	-4	do	25	9.79	3.87	June	0	November	16.9	75	242	94	20	SE.
Strauss	Dona Ana	4,080							4	4.06	4.51	August	0	(n)	9.0	34	177	69	119	E.
Taos	Taos	6,983	2	47.7	97	(m)	-10	Feb. 28	2	11.75	3.56	June	0	November	15.2	42				SW.
Winsors	San Miguel	8,000	4	40.7	83	(p)	-18	Feb. 16	9	19.54	5.29	do	0	(n)	21.6	69				W.

(a) Oct., Nov.

(b) Aug., Nov.

(c) June 27 and Aug. 7.

(d) Aug., Oct., Nov., Dec.

(e) Oct., Nov., Dec.

(f) Apr., Oct., Nov.

(g) July 2, Aug. 5.

(h) July 23 and Aug. 1.

(i) June 28, July 14, Aug. 2.

(j) June 27, July 15.

(k) Jan., Apr., Oct., Nov.

(l) June 28, July 30.

(m) June 28, Aug. 5.

(n) Nov., Dec.

(o) July 30 and Aug. 1.

(p) June 28, July 1.



*Monthly and annual precipitation for the year 1903, with departure from the normal.*

Station	Jan.		Feb.		Mar.		Apr.		May.		June.	
	Precipitation.	Departure.	Precipitation.	Departure.	Precipitation.	Departure.	Precipitation.	Departure.	Precipitation.	Departure.	Precipitation.	Departure.
Alamogordo	0.30		1.00		0.40		Tr.		0.48		1.30	
Albert	Tr.	-0.25	1.58	+1.12	Tr.	-0.46	0.81	-0.13	.27	-2.12	5.90	+3.68
Albuquerque	.08	- .31	.41	+ .05	.38	+ .16	.05	- .23	.18	- .18	2.48	+1.63
Alma	.01	- .92	.30	- .08	.29	- .23	Tr.	- .43			1.21	+ .54
Arabela	.22		1.27		Tr.		.00		.40		6.81	
Bell Ranch	Tr.		1.45		.36				1.33		5.09	
Bluewater	.10	- .34					.74					
Cambray	.74		1.55		.80		Tr.		.40		.43	
Carlsbad	.33	+ .05	.35	+ .12	Tr.	- .29	.51	+ .15	Tr.	- .65	4.55	+1.99
Cloudercroft			4.60		.90		.15				4.01	
Deming	.49	+ .05	.85	+ .43	1.00	+ .54	.00	- .07	.13	- .09	3.82	+2.90
Dorsey	Tr.		1.63		.22		.98		.29		8.60	
Eagle Railroad	.24	- .23	1.04	+ .32	.18	- .46	1.86	- .65	1.55	-1.11	5.34	+3.15
Engle					.83	+ .30	.27	- .05	.77	+ .53	2.39	+1.56
Fort Bayard	.78	- .08	.52	- .37	1.27	+ .69	.16	- .10	.17	- .10	1.75	+1.04
Fort Stanton	.56		.75		.17		.20		.38		3.41	
Fort Union	Tr.	- .47	1.60	+1.15	.11	- .42	.54	- .25	1.05	- .76	6.69	+4.53
Fort Wingate	.46	- .58	.92	- .55	.45	- .49	1.27	+ .48	1.05	+ .66	1.36	+ .77
Fruitland	.09	- .25	.75	+ .03	.10	- .04			.03	- .42		
Gage	.27		.20		.90		.00		.25			
Galisteo	.10	- .43	.70	+ .24	.45	+ .14	.12	- .23			3.10	+2.08
Gallinas Springs	.10	- .34	2.08	+1.52	.27	- .30	1.15	+ .22				
Golden					1.04		.15				3.17	
Hot Springs	Tr.		1.60		.08		.31		.17			
Las Vegas	.07		1.42		.13		.52		.22		6.24	
Lordsburg	.00	- .55	Tr.	- .33	.90	- .39	.00	- .10	.27	+ 0.4	.58	+ .30
Los Lunas			.60	+ .19	.55	+ .06	Tr.	- .58	1.40	- .52	2.05	+1.51
Luna			1.28		.58		Tr.		1.03		3.02	
Mesilla Park	.20	- .11	.98	+ .55	.37	- .04	.08	- .08	.10	- .41	3.65	+3.02
Mountainair	.60		5.39		.46		.43		.06		2.96	
Raton			2.10	+1.26	.05	- .24	.00	-1.22	.02	-1.74	9.44	+7.23
Roswell	.22	- .31	.96	+ .54	.10	- .13	Tr.	- .42	.74	- .43	4.37	+3.37
San Marcial	.05	- .19	Tr.	- .19	Tr.	- .18	Tr.	- .18	Tr.			
Santa Fe	.11	- .49	1.31	+ .51	1.32	+ .68	.67	- .05	.17	- .89	3.87	+2.93
Strauss	.50		.60		.40		.45		.48		2.82	
Taos	.25		1.93		1.40		1.58		Tr.		3.56	
Winsors	Tr.	-1.18	1.70	+ .38	1.02	+ .08	1.88	+ .99	.98	- .84	5.29	+2.76

Station.	July.		Aug.		Sept.		Oct.		Nov.		Dec.		Annual.	
	Precipitation.	Departure.	Precipitation.	Departure.	Precipitation.	Departure.	Precipitation.	Departure.	Precipitation.	Departure.	Precipitation.	Departure.	Precipitation.	Departure.
Alamogordo	0.83		1.48		1.16		0.00		0.00					
Albert	1.90	-1.35	2.24	0.00	Tr.	-1.51	.33	-0.58	.00	-0.46	Tr.	-0.85	13.03	-2.91
Albuquerque	.32	- .85	.00	-1.29	1.93	+1.06	.00	- .78	.00	- .42	.00	- .29	5.83	-1.45
Alma	1.46	-1.44	2.72	+ .12	2.91		.00	-1.69	.00	- .73				
Arabela	.72		1.74		1.82		.00		.00		.00		12.98	
Bell Ranch	.73		2.15		1.89		1.13		Tr.		.00		13.87	
Cambray	.09		1.55		1.43		.00		.00		.00		8.02	
Carlsbad	.00	-2.86	.48	-1.94	1.83	+ .74	.00	- .89	.00	- .41	.00	- .44	8.05	-4.43
Cloudercroft	.66		2.98		1.85		.00		.00		.28			
Deming	.01	-1.98	.40	-1.13	2.84	+1.31	.00	- .73	.00	- .55	.05	- .31	9.09	+ .37
Dorsey	.95		1.52		.38		.22		.01		.10		14.90	
Eagle Railroad	1.10	-1.21	2.58	- .16	.04	1.90	1.87	+ .57	.03	- .46	.25	.79	16.08	-2.93
Engle	Tr.	-2.44	.22	- .90	1.28	+ .28	.00	- .43	.00		.00			
Fort Bayard	.45	-2.69	3.87	+1.10	3.36	+1.39	Tr.	-1.00	.00	- .57	Tr.	- .75	12.33	1.44
Fort Stanton	.62		1.55		1.55		.48		.00		.05		9.52	
Fort Union	.78	3.05	2.02	-1.92	1.93	- .14	.05	- .98	.00	- .62	.05	.51	14.82	-3.44
Fort Wingate	1.18	-1.23	1.82	- .32	1.77	+ .50	.00	-1.05	.00	- .77	.06	.98	10.34	3.61
Fruitland	.09	.30					.00		.00		Tr.	.24		
Gage			.72		2.84		.00		.00		Tr.			
Galisteo	1.93	- .65	1.80	- .54	.10	-1.52	.00	.96						
Gallinas Springs	.01	2.84	1.42	- .70	.29		.00	1.04	.00	- .64	.05	- .70		
Golden	.81		1.56		.12		Tr.		.00		.01			
Hot Springs	2.81													
Las Vegas	1.41		3.57		1.11		.00		Tr.		.12		14.81	
Lordsburg	.45	-1.20	.70	.82	.93	.09	.00	.77	.00	- .42	.21	.48	4.04	-4.03
Los Lunas	.50		.35	.43	1.85		.00		.00					
Luna	1.31		5.60		3.18				.00		.10			

*Monthly and annual precipitation for the year 1903—Continued.*

Station.	July.		Aug.		Sept.		Oct.		Nov.		Dec.		Annual.	
	Precipitation.	Departure.	Precipitation.	Departure.	Precipitation.	Departure.	Precipitation.	Departure.	Precipitation.	Departure.	Precipitation.	Departure.	Precipitation.	Departure.
Mesilla Park .....	.97	-1.18	1.50	-.48	2.43	+1.22	.00	-.81	.00	-.44	.01	-.47	10.29	+ .85
Mountainair .....	.52	1.71	.....	.36	.....	Tr.	.....	.00	.....	.52	.....	13.01	.....	.....
Raton .....	.02	-2.55	2.12	+.62	.20	-.68	Tr.	-.72	.01	-.21	.25	-.07	.....	.....
Roswell .....	.....	.....	.....	.....	.92	-1.12	Tr.	-1.61	.00	-1.32	.00	-.45	.....	.....
San Marcial .....	.....	.....	.....	.....	.....	.....	.02	.....	.00	.....	.00	.....	.....	.....
Santa Fe .....	.56	-2.22	1.18	-1.43	.55	-.93	.02	-.98	.00	-.78	.03	-.81	9.79	-4.46
Strauss .....	.15	.....	4.51	.....	4.15	.....	.00	.....	.....	Tr.	.....	14.06	.....	.....
Taos .....	.37	.....	2.36	.....	.30	.....	Tr.	.....	.00	.....	.10	.....	11.75	.....
Winsors .....	3.75	-.41	4.39	+1.59	.32	-2.07	.00	-.80	.00	-.91	.21	-.71	19.54	-1.12

*Annual summary of meteorological data, Santa Fe, N. Mex., 1903.*

Month.	Pressure (corrected).			Moisture. <sup>a</sup>				Average daily cloudiness, 0 to 10.	Wind.				Percentage of sunshine.
	Monthly mean.	Extremes.		Dew-point.		Relative humidity.			Average hourly velocity.	Maximum velocity.	Direction at time of maximum velocity.	Prevailing direction.	
		Maximum.	Minimum.	6 a. m.	6 p. m.	6 a. m.	6 p. m.						
January .....	23.20	23.48	22.90	13	17	59	52	2.8	7.3	28	NW.	NW.	82
February .....	23.12	23.47	22.77	12	17	66	59	3.6	8.0	46	S.	SE.	67
March .....	23.21	23.51	22.92	19	18	64	35	3.2	7.1	36	S.	NW.	76
April .....	23.19	23.48	22.95	23	19	52	28	3.6	8.6	39	SE.	SE.	74
May .....	23.20	23.50	22.92	27	20	49	22	2.7	8.1	39	SW.	SW.	81
June .....	23.32	23.46	23.14	42	40	67	47	4.4	5.9	27	S.	E.	64
July .....	23.37	23.49	23.08	42	40	50	29	2.6	7.1	31	SE.	SE.	84
August .....	23.36	23.50	23.20	44	42	56	34	3.5	6.3	34	SE.	SE.	74
September .....	23.34	23.49	23.07	35	33	58	34	3.7	5.8	28	SW.	SW.	73
October .....	23.35	23.57	23.05	22	21	48	26	1.0	5.9	34	SW.	SE.	96
November .....	23.31	23.47	23.01	15	17	44	30	1.1	5.7	26	SW.	SE.	96
December .....	23.29	23.51	22.89	8	14	49	42	.6	6.2	25	NW.	NE.	98
Year .....	23.27	23.57	22.77	25	25	55	36	2.7	6.8	46	S.	SE.	80

<sup>a</sup> Mountain time.*Voluntary observers.*

Stations.	Observers.	Stations.	Observers.
Alamogordo .....	J. C. Dunn.	Golden .....	R. M. Carley.
Albert .....	H. M. Hanson.	Las Vegas .....	Dr. Wm. C. Bailey.
Albuquerque .....	John Weidmann.	Lordsburg .....	Agent Southern Pacific Rwy.
Alma .....	Maurice Coates.	Los Lunas .....	Richard Pohl.
Arabela .....	A. M. Richardson.	Luna .....	Montague Stevens.
Aztec .....	L. C. Grove.	Mesilla Park .....	New Mexico Agricultural College.
Bell Ranch .....	C. M. O'Donel.	Mountainair .....	John W. Corbett.
Cambray .....	Agent Southern Pacific Rwy.	Raton .....	Agent Atchison, Topeka and Santa Fe Rwy.
Carlsbad .....	H. F. Christian.	Rociada .....	Frank J. Cutler.
Cloudcroft .....	Albert Walker.	Roswell .....	New Mexico Military Institute.
Deming .....	Agent Southern Pacific Rwy.	San Marcial .....	Agent Atchison, Topeka and Santa Fe Rwy.
Dorsey .....	W. C. Barnes.	San Rafael .....	C. M. Grover, M. D.
Eagle Rock Ranch .....	Jackson Tabor.	Santa Fe .....	Weather bureau.
Engle .....	Agent Atchison, Topeka and Santa Fe Rwy.	Socorro .....	Prof. F. A. Jones.
Espanola .....	Jim Curry.	Springer .....	Agent Atchison, Topeka and Santa Fe Rwy.
Fort Bayard .....	United States Sanitarium.	Strauss .....	Agent Southern Pacific Rwy.
Fort Stanton .....	Do.	Taos .....	Frank Staplin.
Fort Union .....	M. C. Needham.	Torrance .....	J. H. Cheney.
Fort Wingate .....	Post surgeon.	Vermejo .....	H. W. Adams.
Fruitland .....	Cyril Jas. Collyer.	Winsors .....	H. D. Winsor.
Gage .....	Agent Southern Pacific Rwy.	W. S. Ranch (near Maxwell.)	Wm. French.
Galisteo .....	Sylvester Davis.		
Gallinas Springs .....	Frank Clark.		

*Forecast display stations.*

[Distributing center, Denver, Colo.]

Stations.	Displaymen.
Albuquerque .....	Postmaster.
Las Vegas .....	Plaza hotel.
Santa Fe .....	Weather bureau.

NOTE.—Special warnings are telegraphed to J. F. Hutchison, Springer; Ross McMillan, Socorro, and The Record, Roswell.

## UNITED STATES GENERAL HOSPITAL, FORT BAYARD.

[E. T. COMEGYS, *Lieutenant-Colonel, Deputy Surgeon-General, U. S. Army, Commanding.*]

Since January 1, 1903, the following additions, etc., have been made to this hospital; some are completed, but most of them are under construction or in process of installation: A new officers' infirmary, an addition to the enlisted men's infirmary, a morgue, receiving vault, crematory, laboratory, quartermaster and medical storehouses, hospital corps barracks, cold-storage plant, and an electric-light plant.

Five portable cottages have been sent here; 1 is in use and the other 4 will soon be.

Sleeping out of doors is encouraged, and, in some cases, ordered. For this tents, framed and floored, are used, as also the porches. The porches are protected on the windward side by glass. The solarium completed last March has been of great advantage to the patients.

Every effort has been made to make life here as pleasant as possible. A stage, with scenery, billiard and pool tables, an Angelus, and all sorts of games have been provided. Wagon transportation for recreation has been furnished as freely as means have allowed.

The danger of carrying infection has been thoroughly understood and each patient is provided with a spit cup upon his arrival at the station.

The following new buildings are needed, viz, officers' quarters, dining rooms for the officers' and enlisted men's infirmaries, wards for ambulant patients, chapel, quarters for sergeants, first-class hospital corps, administration building, and a special hospital for sick noncommissioned staff officers of both the Army and Navy.

## TREATMENT.

The treatment is simply hygienic and climatic, with the treatment of intercurrent complications as they arise. All patients are required to remain out of doors during the day except those confined to the infirmary. In inclement weather they spend the time in the solarium, where they are sheltered and at the same time have the benefit of the sunlight.

The patients, for purposes of treatment, are divided into 4 classes:

1. Convalescent ambulant patients. These men require little or no special treatment. They are quartered in the wards and report at sick call at 9 a. m. each morning whenever the progress of their cases requires special attention.



2. Febrile ambulant cases. These cases are taken from those of the first class or assigned to this class for treatment at the time of admission to the hospital. Cases of the first class who are shown by the weekly weight records to be losing are assigned to this class, as are also those who have fever. These patients are quartered in tents. They are under special supervision as regards their diet and manner of life. They are required to take three hours' rest in bed each day, one hour and one-half in the morning and one hour and one-half in the afternoon. They are required to retire at 9 p. m. Careful record of these cases is kept and any change for the better or worse noted. It has been found that the enforced rest, constant out-of-door life, and attention to the minor details of treatment in this class of cases results, in the great majority of instances, in quick and decided gain, as shown by the weight and temperature records. This treatment is also a decided benefit to the patient in that it trains him as can be done in no other way to the understanding and observance of the regular hours and fundamental laws of health without which it is impossible to achieve the best results in the treatment of pulmonary tuberculosis.

3. The third class of patients are the uncomplicated but far-advanced cases. These are assigned to quarters in ward 1, a building situated near the infirmary and removed from the larger wards, thus allowing these patients greater quiet and more seclusion than could be obtained in one of the larger wards. These patients mess at the infirmary, where they are able to procure special articles of diet and are not obliged to go a great distance from their quarters.

4. The fourth class of patients are those who are either confined to bed or whose cases require constant supervision. They are quartered at the infirmary. It has been found desirable to keep a certain number of this class constantly out of doors. For them tents have been pitched at a short distance from the building. These patients are subject to the same supervision as the tent patients of class 2. In addition they are constantly near the hospital and have the advantage of special diet and treatment that the condition of each individual may demand.

#### STATISTICAL REPORT.

During the year 1903 the total number of patients treated at the Fort Bayard general hospital was 644. Of these, 204 were present at the beginning of the year and 257 remained at its close.

The patients treated were classified as follows: First class, exhibiting permanent afebrility without tubercle bacilli in the sputum, 95 cases; second class, exhibiting permanent afebrility or approximately permanent afebrility with tubercle bacilli in the sputum (pure tuberculosis or a minor degree of mixed infection), 235 cases; third class, exhibiting permanent febrility with tubercle bacilli (mixed infection), 304 cases. To this must be added a fourth class, exhibiting permanent or approximate febrility without tubercle bacilli in the sputum, 9 cases.

The results obtained in the 643 cases reported on are classified as follows: First, arrested cases, those in which all outward symptoms of the disease have disappeared; second, improved cases, those not arrested but in which the lesion is less than at the initial examination; third, unimproved cases, and fourth, deaths.

The following table gives the results obtained in each of the classes of cases, with the results of all classes combined:

Class.	Num-ber of cases.	Arrested.		Improved.		Unimproved.		Died.	
		Num-ber.	Per cent.	Num-ber.	Per cent.	Num-ber.	Per cent.	Num-ber.	Per cent.
First .....	95	18	18.95	73	76.84	4	4.21	0	-----
Second .....	235	4	1.70	168	71.48	59	25.10	4	1.00
Third .....	304	0	-----	96	31.57	142	46.71	66	21.71
Fourth .....	9	0	-----	3	33.33	3	33.33	3	33.33
Total .....	643	22	3.42	340	52.88	208	32.34	73	11.35

The following table shows the complications associated with the pulmonary lesions. In this table cavities are listed in cases where the physical signs give unmistakable evidence of their presence. It will be seen that they are present, showing a far-advanced lesion, in 25 of the cases of class No. 2 (afebrile cases).

Complications.	Class 1.	Class 2.	Class 3.	Total.
Pleurisy, with effusion .....	4	5	24	33
Empyema .....	1	1	3	5
Cavities .....	-----	25	53	78
Hemorrhages .....	1	2	7	10
Dilatation, heart .....	1	1	1	3
Mitral insufficiency .....	2	-----	3	5
Tricuspid insufficiency .....	-----	-----	1	1
Hypertrophy, heart .....	-----	-----	2	2
Chronic parenchymatous nephritis .....	3	4	11	18
Chronic interstitial nephritis .....	-----	-----	1	1
Pneumonia .....	1	-----	1	2
Syphilis .....	2	1	1	4
Laryngeal tuberculosis .....	1	1	6	8
Tubercular synovitis, knee joint .....	1	-----	-----	1
Tubercular prostatitis .....	1	-----	1	2
Dysentery .....	1	2	-----	3
Chronic articular rheumatism .....	1	-----	1	2
Fistula in ano .....	1	-----	-----	1
Ischio-rectal abscess .....	-----	1	-----	1
Caries of spine .....	2	-----	-----	2
Alcoholism .....	-----	1	-----	1
Hemiplegia .....	-----	1	-----	1
Pulmonary stenosis .....	-----	-----	1	1
Abscesses .....	1	-----	-----	1
Aortic stenosis .....	-----	1	-----	1

Table of deaths, showing the length of time after admission for each case.

	Weeks.				Months.																Average.	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Months.	Days.
Class 2 .....	-----	-----	-----	1	-----	1	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	18	23
Class 3 .....	6	4	2	6	6	5	7	4	7	5	1	1	2	-----	1	1	2	1	1	2	7	8
Class 4 .....	-----	-----	-----	1	1	1	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	4	-----

Total for first month, 17; average, 9 months 10 days.

It will be seen from this table that the deaths which occur are mostly during the first few months of stay at the hospital or among the cases which are so far advanced that they have only a few months to live, there being at no time any hope of recovery. Cases not so far advanced that they have only a few months to live will, with suitable attention to the ordinary rules of hygiene, have life prolonged for an indefinite period.

The three deaths in the fourth-class of cases, those in which tubercle bacilli could not be found, were all cases which died of complications rather than from the pulmonary tuberculosis lesion. One case was of empyema, one of tubercular nephritis with abscess of the kidney, and the third a case of pneumonia with only a small tubercular focus. One death which occurred during the year, that of a member of the Hospital Corps who died with rupture of the spleen, is not recorded in this list, as it was not a case of tuberculosis.

Attention is called to the fact that the "unimproved" cases are so recorded when the lesion, at the time of discharge or at the making up of this report, is not less than at the initial examination. In a large number of these cases the disease has been what the compilers of many statistics call "arrested," or changed from an active process to a chronic one. These cases will live in a good climate and under good conditions for a number of years. Many of them have been discharged from the hospital and continue to live in such surroundings. They are at the present time useful members of the communities in which they reside.

It will be seen from the above table that of the deaths during the year 66 were of the third class of cases and 3 of the fourth, the complicated cases referred to above. This average of 69 cases is 94.52 per cent of the total death list. The death rate for patients of the first and second classes combined is but 1.2 per cent. These two classes are made up of the more promising class of patients, which only are admitted to many sanitariums for the treatment of tuberculosis. Among these patients it will be seen that the results obtained are very satisfactory.

The time required for improvement to become evident is shown in the following table:

	Months.								Average months.
	1.	2.	4.	6.	8.	10.	12.	14.	
Class 1 .....	21	60	2	6	-----	-----	-----	-----	2.33
Class 2 .....	18	106	20	9	3	-----	2	-----	2.45
Class 3 .....	14	57	10	8	-----	1	1	1	2.60
Total .....	53	223	32	23	3	1	3	1	2.49

The fact that a large number of patients do not show improvement until the second month of treatment, is due to the fact that a majority of them have arrived here after a long and fatiguing journey, often from the Philippine Islands, and several weeks are needed to recuperate. Other patients require some little time to become accustomed to the higher altitude and changed climatic conditions.

Of the arrested cases, 3 had no physical signs of the disease at the time of admission, and tubercle bacilli were not in the sputum. Of the remaining cases 2 are recorded as arrested on the second month, 3 on the fourth, 8 on the sixth, 1 on the eighth, 3 on the tenth, 1 on the sixteenth, and 1 on the thirty-fourth. The average time required is 9.6 months. Of these cases, 18 belong to the first class and 4 to the second class.

The total number of arrested cases, 22, is small. Few of the patients remain until a cure is completed. Many of the enlisted men



as soon as they are discharged from the Army return to their homes, while others, when they feel themselves able to take up outside work, go elsewhere to complete a cure.

A large proportion of these men do well, but there is a tendency for other men not yet fit to take up active work, to follow their example and leave the hospital at a time when several months are required for treatment before they will be fit to care for themselves. These patients are apt to return for treatment in much worse condition than when they first entered the hospital.

# UNITED STATES PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

[P. M. CARRINGTON, *Surgeon in charge.*]

## Statistics.

Patients under treatment July 1, 1904	150
Patients admitted during the year	236
Patients under treatment June 30, 1904	192
Patients discharged during the year	194
<hr/>	
Ages of patients treated during the year:	
Under 25 years	56
Between 25 and 34 years	134
Between 35 and 44 years	117
Between 45 and 54 years	61
Over 54 years	18
Total	386
<hr/>	
Heredity in patients admitted during the year:	
History of tuberculosis in parents	105
No history of tuberculosis in parents	281
Stage of disease:	
First stage <sup>a</sup>	34
Second and third stages <sup>b</sup>	200
Nontubercular	2
<hr/>	
Area of involvement as shown by physical examinations:	
Right lung only	20
Left lung only	15
Both lungs	346
Doubtful diagnosis of tuberculosis	5
Total	386
<hr/>	
General condition at arrival: <sup>c</sup>	
Good	83
Bad	159
Very bad	144
Total	386
<hr/>	

<sup>a</sup> "First stage" meaning where no consolidation nor excavation can be discovered.

<sup>b</sup> "Second stage" meaning considerable involvement and consolidation without excavation; "third stage" with excavation.

<sup>c</sup> "Good" meaning well nourished and without grave complications; "bad" meaning rather poorly nourished, or with complications not necessarily fatal; "very bad" meaning much emaciated, or with grave complications such as organic heart disease, chronic nephritis, or advanced laryngeal involvement.

## Tubercle bacilli:

Were not present in the sputum of -----cases 26  
 Were present in the sputum of -----do 360

## Record of patients who had pulmonary hemorrhages:

Before arrival only ----- 107  
 After arrival only ----- 15  
 Both before and after arrival ----- 28

Greatest number of patients under treatment at one time during the year ----- 208

## Condition of 194 patients at time of discharge:

Apparently cured ----- 15  
 Arrested ----- 9  
 Improved ----- 87  
 Unimproved ----- 19  
 Died ----- 62  
 Nontubercular admitted and discharged cured ----- 2

Total ----- 194

*Duration of stay and character of cases.*

Character of case.	Longest stay.			Shortest stay.			Average stay.		
	Years.	Months.	Days.	Years.	Months.	Days.	Years.	Months.	Days.
Cured -----	2	7	4		5	18	1		17
Arrested -----	1	5	15		2	18		11	12
Improved -----	3		21			9		7	12
Unimproved -----	3	7	14			2		8	11
Died -----	2	9	16			4		5	10

I have divided the patients into two classes: List A, which consists of patients who were under treatment at the beginning of the fiscal year, and List B, which consists of patients who were admitted during the year.

*List A.*

Patients under treatment July 1, 1903 ----- 150  
 Remaining under treatment June 30, 1904 ----- 58  
 Discharged during the year ----- 92

## Results in cases discharged:

Cured ----- 14  
 Arrested ----- 5  
 Improved ----- 41  
 Unimproved ----- 9  
 Died ----- 23

Total ----- 92

First stage cases ----- 12  
 Second and third stage cases ----- 80

## Stage first—

Cured ----- 8  
 Improved ----- 2  
 Unimproved ----- 1  
 Died (nephritis) ----- 1

## Stages second and third—

Cured ----- 5  
 Arrested ----- 6  
 Improved ----- 39  
 Unimproved ----- 8  
 Died ----- 22

*List B.*

Admitted during the year	236
Discharged during the year	102
Remaining at end of year	134

## Results in cases discharged:

Nontubercular (cured)	2
Cured	1
Arrested	4
Improved	46
Unimproved	10
Died	39

Total 102

Nontubercular	2
First-stage cases	16
Second and third stage cases	84

## First stage—

Cured	1
Arrested	4
Improved	8
Unimproved	2
Died	1

Total 16

## Second and third stages—

Cured	0
Arrested	1
Improved	37
Unimproved	8
Died	38

Total 84

*Complications.*

Syphilis	50	Hemorrhoids	36
Cardiac valvular disease	39	Varicocele	13
Functional disease of heart	17	Adenitis	16
Nephritis	7	Hernia	13
Rheumatism	1	Varicose veins of leg	5
Anæmia	1	Hepatitis and ascitis	1
Diabetes	2	Acute mania	2
Hydropericardium	1	Incontinence of urine	1
Hydrocele	2	Epilepsy	1
Appendicitis	1	Otitis media	2
Rupture of tympanic membrane	1	Effusion of kneejoint	2
Hæmostoma testicle	1	Aneurism	1
Deafness	4	Peritonitis	1
Pleurisy with effusion	8	Ununited fracture inf. max	1
Fracture of ribs	1	Propneumothorax	2
Hydropneumothorax	1	Pneumothorax	2
Gastritis	3	Cystitis	1
Necrosis of lower jaw	2	Epididymitis	1
Chronic diarrhea	3	Asthma	4
Polyuria	9	Eczema	1
Fistula in ano	2	Necrosis of rib	1
Renal calculi	1	Biliary calculi	1
Keratitis	1	Iritis	1
Cataract	1	Atony of bladder	1
Nasal polypi	4	Stricture	4
Occlusion of nares	2	Pero-rectal abscess	2
Occlusion of lachrymal duct	2	Partial paralysis	1
Lateral spinal curvature	1	Lumbago	1



*Organs other than lungs affected.*

Larynx .....	47	Intestines .....	25
Testicles .....	1	Hip joint .....	2
Kneejoint .....	1	Vertebrae .....	1
Ribs .....	1	Tarsal bones .....	1
Trachea .....	1	Pharynx .....	2
Oesophagus .....	1	Peritoneum .....	2
Meninges brain .....	1	Ischiorectal abscess .....	1
Fistula in ano .....	2	Lymph glands .....	2

*Length of time under treatment at sanatorium.*

Over two years .....	9
Between one and two years .....	27
Between six and twelve months .....	45
Between three and six months .....	47
Under three months .....	66
<b>Total .....</b>	<b>194</b>

Of the 194 patients discharged during the year, 24 were under treatment for less than thirty days. The results in these cases were as follows:

Improved .....	4
Unimproved .....	5
Died .....	15
<b>Total .....</b>	<b>24</b>

During the year we have had under treatment, in addition to the above, consumptive officers and employees as follows:

Under treatment July 1, 1903 .....	10
Admitted during the year .....	11
<b>Total .....</b>	<b>21</b>
Still under treatment June 30, 1904 .....	11
Left during the year .....	10
Condition of those leaving at time of discharge:	
Apparently cured .....	2
Improved .....	7
Unimproved .....	1

Our results are very conservatively stated and under any usual nomenclature would show a much larger proportion of cured cases. Several months ago, noting the large number of patients discharged without physical or other signs of disease, or only with signs indicating healed lesions, but who had been under treatment only from three to six months, and were for this reason recorded as "improved" cases, I adopted the plan of calling such cases "arrested," and the "improved" cases herein recorded include a great many which might properly be recorded as "arrested" cases.

It is to be hoped that the efforts which are being made to devise a uniform system of nomenclature for tuberculosis will be successful and that the various terms employed will thereafter always mean the same thing wherever and by whomsoever used. I wish to renew the recommendation contained in my report of 1903 that some law be secured or regulation adopted which will give greater control over patients and enable us to retain them under treatment for a sufficient period to insure recovery or demonstrate their incurability.

During the fiscal year under consideration the rainfall has been greatly less than during any year in the life of the sanitarium, and notwithstanding the comparatively small number of cured cases reported this year our patients have undoubtedly done better, as a rule, than heretofore. While we have a considerable percentage of deaths, this is not remarkable when the character of cases admitted is taken into consideration.

## TREATMENT.

The treatment has been in the main, as heretofore, hygienic, dietary, and symptomatic. I have experimented with the bacilliary treatment introduced by

Doctor Maher, of Connecticut, and while his treatment has undoubtedly been of benefit in a certain proportion of cases, the observations have not been sufficiently prolonged to warrant an opinion at this time of its value.

The daily breathing exercises have been continued and have proven of undoubted value, and the drill has also promoted good discipline.

#### NOSE AND THROAT CLINIC.

The nose and throat clinic, which was for a time necessarily suspended, owing to shortage in medical officers, was resumed November 16, since which date the following cases have been treated:

Disease.	Cases.	Disease.	Cases.
Rhinitis:		Stomatitis	2
Acute	5	Laryngitis:	
Chronic	2	Acute	6
Hypertrophic rhinitis	5	Chronic	4
Rhinitis, chronic, and pharyngitis, chronic	16	Tuberculosis of larynx	17
Empyema of the frontal sinus	1	Tuberculosis of larynx and pharyngitis sica	1
Perforation of septum nasi (tuberculous)	1	Syphilis:	
Epistaxis	2	Secondary, of pharynx	2
Pharyngitis:		Ulceration of septum nasi	1
Simple acute	20	Otitis:	
Simple chronic	12	Media, suppurative, acute	2
Subacute	2	Media, suppurative, chronic	12
Atrophic or sica	5	Media, suppurative, chronic, and eczema of both auricles (moist)	1
Follicular or granular	3	Media, catarrhal	2
Tonsilitis, follicular	4	Perichondritis, auriculæ	2
Uvulitis	1	Cerumen, impacted	5

#### Operations.

Disease.	Cases.	Disease.	Cases.
Removal of spur from septum nasi	5	Removal nasal polypi (14)	1
Removal posterior end of middle turbinate	1	Removal nasal polypi (8)	1
Removal anterior end of middle turbinate	5	Paracentesis auriculæ	2
		Hajjek's operation for deflected septum	1

Several cases of laryngitis included in the report of nose and throat work were treated by applications of bacillus X of Maher with marked benefit.

#### REPAIRS TO BUILDINGS, ETC.

This being in the natural course of events the last annual report of the operations of this sanatorium which I shall render, it seems appropriate to give a brief résumé of the work under this head which has been accomplished during my detail. When I assumed command of the station in January, 1901, very little in the way of repairs had been accomplished except interior repairs to building No. 1, commanding officer's quarters; minor repairs to building No. 2, passed assistant surgeon's quarters, and certain essential repairs to the hospital building.

During the past three and a half years nearly all the buildings have been reshingled, and No. 4 has been overhauled and repaired for occupancy by convalescent patients. Building No. 5 has been converted into a power plant and steam laundry. In this building we have placed an ice plant, with cold storage rooms and dairy facilities, and an additional boiler which furnishes steam heat for buildings Nos. 4, 6, and 7. In this building also has been placed a dynamo, which supplies light to all buildings and the corrals and a considerable portion of the grounds.

Building No. 6 has been converted into a modern kitchen and dining room, with subsistence storeroom, bakery, and attendants' quarters.

Building No. 7, which in January, 1901, consisted of bare stone walls left after the building was destroyed by fire during the army occupancy, has been rebuilt, and is now occupied as an executive building and laboratory.

Building No. 9 has been remodeled and the first floor contains the post-office, two storerooms, and a commodious tobacco and barber shop, while the upper floor has been converted into a light and airy hall, which is used for reading room and chapel, with book and other necessary rooms adjoining.

Buildings Nos. 10 and 11, which were in utter dilapidation, have been converted into well-lighted and ventilated dormitories and are now occupied by ambulant consumptives, No. 11 containing also a modern and well-equipped operating room, with dressing room and surgical ward.

No. 13 has been entirely done over and is so arranged that it may be used for either single men or families; it is now occupied by two assistant surgeons, several patients who are commissioned officers of other services and beneficiaries of this service, and employees detailed in the office. These, except one commissioned officer who has a family, constitute the "bachelor officers' mess."

All these buildings have been supplied with modern plumbing, and on buildings Nos. 1, 2, 3, and the hospital commodious and artistic porches have been erected.

The corrals have been completely done over; a sufficient number of stalls and feed rooms were erected in the horse corral; hay sheds and milking sheds with cement floors have been erected in the cow corral. The corrals are also lighted by electricity and dangerous oil lanterns dispensed with.

An electric motor has been installed and is used for pumping water. In connection with the electric-light plant over 1,000 lights and an electric fire-alarm system have been installed.

I inclose as an exhibit a more detailed report of the building operations submitted by the architect. The expenses of repairs to buildings since I assumed command of the station, including contracts, material, labor, and salary of architect have been \$134,525.86.

#### WATER SUPPLY.

During the year just ended the question of water supply has been most perplexing, and the scarcity of water has been a source of constant anxiety. The failure of the rains during the summer of 1903 and the almost total absence of snow in the mountains during the past winter deprived us of our former supply of water from the Rio Bonito. The old army wells became almost dry, and practically our only source of supply have been some little springs which rise in the bed of the Rio Bonito about 1 mile west of the buildings. The water from these springs has been carried through a ditch to the old sutler's store, used in the early days of the sanatorium as a chicken yard, and thence by means of a flume across the river to a wooden tank at the army well; thence it has been pumped to a small reservoir on Little Round Top Hill. With great economy this has been sufficient to supply our urgent domestic needs, but we have been unable to store any water, and night after night we have gone to bed with less than 5,000 gallons of water in the reservoir, a condition which, especially during the windy season, has given rise to the gravest apprehensions, for had a fire occurred at this time we would have been absolutely helpless. On more than one occasion it has been a question of going without coffee or dispensing with the morning ablutions.

The uncertainty of the water supply and its inadequacy led to a recommendation for boring a new well. This recommendation was approved by the bureau; the well has been bored, cased, and the pump is now being placed. A partial test showed that this well would furnish not less than 40,000 gallons of water daily, running the pump both night and day. Additional wells for irrigating the garden and alfalfa fields should be bored, and it is probable that in boring such wells water will be developed sufficiently near the surface to permit pumping by means of windmills. Earth reservoirs may be constructed at small cost and water stored for irrigating purposes. Such reservoirs can also be used as fish ponds, and thus add to our dietary an important article of food, which we are at present unable to use by reason of our distance from sources of supply.

#### MILK SUPPLY.

The shortage of milk referred to in my report of 1903 is less than heretofore. During the fiscal year 1903 we produced 19,120 gallons of milk. During the



fiscal year ended June 30, 1904, we produced and used 24,053 gallons of milk and a small quantity of butter. The increase in the milk supply has been accomplished by reason of the addition to our herd, by natural increase, of a number of cows, and in the natural order of events the number of milch cows will continue to increase, and it is only a matter of a short time when, without any additional purchases, we will be able to produce all the milk we can consume.

A purchase of milch goats has been authorized by the bureau in order to add to the milk supply and give occupation to the patients willing to undertake their care. There has been some difficulty in securing goats of the right kind, but negotiations are now under way and within a few weeks the experiment will be begun.

#### RANGE OR BEEF CATTLE.

Our beef herd continues our most promising investment. The number reported on hand in my report of 1903 was 369. The property return for the same period showed 401. This difference is accounted for by the transfer on the property return of a number of Jersey steers from the dairy to the range herd and by probable error in count of a few head. At the time of rendering the report of 1903 I thought that an error had been made in counting 22 calves both with the Jersey and beef herds, but the cowboy then employed assured me so positively that this bunch of calves had only been counted once that I allowed the report to stand, but a round-up and count held this week demonstrated that this lot of calves, 22 in number, were counted twice last year.

The present record of our cattle is as follows: We have branded this season 149 calves, 46 head of cattle have been killed for beef, and 10 head have died. We have remaining 474 head. There are also 110 head of cattle in the dairy herd. A portion of these 110 have heretofore been reported as having been transferred to the beef herd. By a recent authority granted by the bureau all cattle are now entered on the property return as "cattle." This total of 584, therefore, includes all range stock and dairy stock, consisting of bulls, cows, 2-year-olds, yearlings, and calves.

The 46 head of cattle killed dressed 17,563 pounds, worth at contract price \$1,229.31.

The original investment of beef cattle, including the bulls recently purchased, was approximately \$6,800, and although the herd has not grown sufficiently large to entirely supply us with beef, yet in the past two years we have killed and used equal in value to almost one-third of the original investment.

The progress of our cattle investment may be better shown by the following statement:

Original investment.....	\$6, 800. 00
Value of beef consumed.....	2, 192. 48
Net investment.....	4, 607. 52
Present value of the herd:	
9 bulls (3 station raised), at \$75.....	675. 00
3 bulls, thoroughbred.....	1, 000. 00
462 head of cows and young stuff, at an average valuation of \$25.....	11, 550. 00
Total.....	13, 225. 00
Net investment.....	4, 607. 52
Showing an actual profit in three years of.....	8, 617. 48

From this sum should be subtracted salary of one cowboy for three years and salt fed to range cattle, but even after subtracting these items, amounting to approximately \$1,200, there remains a net profit of over \$7,400, which is a most excellent showing, and our herd of cattle is generally conceded by cattlemen in this vicinity to be as fine as any in the Territory, if not the very finest. Were I to remain here during the next few years I should by killing for beef the less desirable individuals in the herd gradually raise the standard of our herd, and I venture to suggest that the bureau instruct my successor to follow this plan, which will undoubtedly result within a very few years in a model herd of beef cattle, which will not only be a source of pride and profit, but will also be an example and object lesson in cattle raising which will prove beneficial to the community at large.

## HORSES.

Our experiment in horse raising, begun three years ago, has been most successful. We now have 18 colts, 7 of which will be 3 years old in the spring of 1905, when they are to be broken, and I see no reason why it should be necessary to purchase additional horses, except an occasional stallion. These 18 colts have been raised thus far without expense.

## HOGS, POULTRY, ETC.

We have no difficulty in raising all the hogs we can feed. During the present year we have killed a number of hogs, which have dressed 11,602 pounds and furnished 1,140 pounds of lard. These products at the contract prices were worth \$756.80, and the contract price for pork was only half the market price, owing to the fact that the contractor looked at our herd of hogs before putting in his bid. To raise these hogs has not cost a cent. In fact, it is the most economical disposal of garbage that can be devised.

Belgian hares, while considered a delicacy by a great many people, were not popular with our patients, and as the expense of raising them was considerable, I killed and served the remainder, amounting to 325 pounds.

Our poultry yard has furnished 425 pounds of dressed chickens, 75 pounds of dressed turkey, and 610 dozen eggs. We have been very successful this season with our chickens, and the construction of a new poultry house has been authorized by the bureau. This will, I am sure, prove an advantageous investment, and will enable us to produce a much larger proportion of fresh eggs, which are so essential in the treatment of tuberculosis. Our flock of chickens now numbers 555, 365 of which have been raised in the past three months.

Three years ago I acquired at my own expense three pairs of pigeons, and about one year ago three additional pairs were given me. One day's work on the part of the carpenter fitted up an old loft for them above the blacksmith shop. The flock now numbers over 100, and we have a constant supply of squabs for use at the hospital.

## FARM AND GARDEN.

The farm and garden work, owing to the extreme scarcity of water, has been most disappointing, but the young orchard of fruit trees has not only been kept alive, but is growing, and a portion of the orchard should bear fruit next year.

## LIBRARY.

The new library and reading room, recently occupied, is a very valuable means of entertainment for the patients. The books have been neatly numbered, classified, arranged, and catalogued, and a system of cards provided, so that the patients may receive books and at the same time the librarian may keep a proper account of them.

## SANATORIUM ADMINISTRATION.

The growth of the sanatorium has rendered it necessary to systematize the work, assigning to each officer his portion, which I have done in the following order:

*Assignment of medical officers and schedule of daily duties.*

The commanding officer will assume charge of the entire sick call, assisted by Acting Assistant Surgeon O'Reilly.

Assistant Surgeon Trask is detailed in charge of the laboratory, including the routine and special work; he will also have supervision over necropsies and all other pathological work.

Assistant Surgeon Ebert is detailed in charge of the physical-examination room, and will have charge of all clinical records of every description.

Acting Assistant Surgeon Laws is detailed to assist Assistant Surgeon Ebert in the physical-examination room in the forenoon and in the afternoon as assistant in the pathological work of the laboratory.

Acting Assistant Surgeon O'Reilly will act as assistant to the commanding officer at morning sick call, and will review the medical journals, marking articles of interest for the commanding officer.

Acting Assistant Surgeon Walker is detailed in charge of the nose and throat

clinic, and will receive and treat such cases as may be referred to him by any of the officers making sick call; he is also detailed as attending surgeon to the attendants and other employees, and will have charge of the surgical clinic.

Acting Assistant Surgeons Laws, O'Reilly, and Walker will alternate month about in making evening sick call; the object of the evening sick call being to meet such emergencies as may arise after morning sick call is made, and which could not, without prejudice to the patient, remain unattended until the following morning.

#### OFFICER OF THE DAY.

The junior medical officers will serve successively as officers of the day, and will be on duty as such for twenty-four hours, beginning at 6 o'clock a. m. It will be the duty of the officer of the day to make inspection of all wards, tents, and rooms occupied by patients between 8 and 9 o'clock a. m., and at 10.30 a. m. he will report the result of such inspection verbally to the commanding officer. It will also be the duty of the officer of the day to see arriving patients, assign them to beds, and see that they are otherwise properly cared for, and to answer emergency calls.

The officer of the day will also make a general round of inspection between the hours of 9 a. m. and midnight, with the object of ascertaining whether or not good order is prevailing; this round will extend from the vicinity of the hospital to the corrals, and the officer of the day will exercise his judgment about entering buildings. The tent village should always be included in this inspection. In case of necessity the commanding officer may be called at any hour to receive report concerning any matter which, in the opinion of the inspecting officer, may require immediate attention, and a verbal report may be made the following morning of matters not especially urgent but still requiring attention.

The officer of the day will not be excused from duty and will not absent himself from the occupied portion of the reservation during his twenty-four hours of duty; he should remain in easy call, and when not in the executive building should indicate on the office bulletin board where he may be found.

#### OFFICE HOURS.

Medical officers, pharmacists, and office assistants will report at the office of the commanding officer at 8.30 a. m. and 1.30 p. m. This order, however, shall not prevent the officer of the day completing his inspection in the proper manner, even though to do so may prevent him reporting before 9 a. m.

All affected by this order will be expected to remain at their posts of duty, unless excused, from 8.30 a. m. until noon and from 1.30 p. m. until the day's business is completed.

Office hours on Sunday from 8.30 a. m. until noon only

#### OFFICIAL DAILY SCHEDULE.

*Surgeon Carrington.*—8.30 a. m., office; 8.40 a. m., hospital sick call; 9.30 a. m., ambulant sick call. From 10.30 until noon the commanding officer may be found in his office to receive necessary reports and attend to the requests of patients and others; he will also be in his office from 1.30 p. m. to the close of business.

*Assistant Surgeon Trask.*—8.30 a. m., at office and then to laboratory room until 12 o'clock noon, and from 1.30 p. m. until the close of business also in the laboratory.

*Assistant Surgeon Ebert.*—8.30 a. m., office; then to examination room until noon. From 1.30 p. m. until the close of business in examination room working on records.

*Acting Assistant Surgeon Laws.*—8.30 a. m., office; then to examination room until noon. At 1.30 p. m. in the laboratory until excused by Assistant Surgeon Trask.

*Acting Assistant Surgeon O'Reilly.*—8.30 a. m., office; then to accompany the commanding officer on sick call. At 1.30 p. m. at office for going over medical journals and such other work as may be verbally assigned to him.

*Acting Assistant Surgeon Walker.*—8.30 a. m., office until 9 a. m., seeing employees who may have been reported sick by the pharmacists. From 9 to 12 o'clock at the nose and throat clinic. From 1.30 p. m. until completion of the work at the surgical operating room.

*Pharmacists.*—Must also report at the office at 8.30 a. m. and afterwards will proceed to their usual duties.



## NECROPSIES.

As a rule necropsies will be held at 1.30 p. m., immediately after officers have made their afternoon report, and on necropsy days all other work after noon will be omitted, except in cases of emergency.

All officers will be expected to be present at necropsies, but the officer in charge of the surgical clinic will complete his surgical dressings before reporting at the necropsy room.

## NOTES.

The officer in charge of the surgical clinic will send to the laboratory specimens from cases under his care and of which it is desired to have an examination made. He will consult the officer in charge of the laboratory as to the character of such specimens.

Inspection and muster will be held on Saturdays at 7 a. m.

The officer of the day may call or cause to be called any other officer in case assistance is needed, and any officer so called shall respond promptly.

Nothing in this order shall be construed as authorizing discontinuance of work prior to 4 p. m.

This order, essentially, is still in force, although some of the officers mentioned therein are no longer on duty here, and it has proven very satisfactory in operation.

In order to keep a check on the patients, the head nurse and the night watchman each have a roll book, showing the building and bed occupied by each patient. Roll is called at morning sick call, after which absentees are looked up and accounted for, and the night watchman again makes roll call by bedside visitation at 9 p. m. The double daily inspection by the officer of the day has had a most beneficial effect.

Our records have been greatly improved during the past three years and we keep a number which are not required by the regulations, but which greatly facilitate our work and its tabulation. A careful record is kept of all work done in the laboratory, nose and throat clinic, and examination rooms, and the officers in charge of these divisions of work make daily, monthly, and other periodical reports to me of their work.

Many other orders concerning administrative details have been made during the year, but are probably not of sufficient interest to include in this report.

## LABORATORY.

During the last ten months of the fiscal year the following work was done in the laboratory:

Sputum examinations-----	1, 112
Urine examinations-----	540
Quantitative examinations for sugar in urine-----	5
Hemoglobin estimations according to Fleischel-----	124
White blood cell counts-----	13
Red blood cell counts-----	2
Examinations of blood for the plasmodium malarie-----	2
Quantitative and qualitative gastric juice analysis-----	1
Faeces examinations-----	1, 112
Microscopic examinations of exudates, transudates, and pus-----	9
Necropsies-----	52

Not all the necropsies have been written up to date, for the reason that we have been unable with the force at our disposal to work continuously at them.

Besides the foregoing routine laboratory work, considerable other work has been carried on, as follows: Experiments to establish the condition of our hospital and dormitories with reference to their possible infection with tubercle bacilli; the administration of the tuberculin test to our daily herd of 60 milch cows; work done to ascertain morphological, cultural, and pathological character of the bacillus X of Maher; also the examination of milk from our different dairy cows to establish the absolute and relative value of their yield.

## RECOMMENDATIONS AND CONCLUSION.

Being myself a beneficiary of this sanatorium, its conduct, operations, and aims have become very dear to me, and when I begin to talk or write of it, it is very difficult for me to limit my remarks to proper proportions.

There is one question of paramount importance to the individual consumptive, namely, the durability of cure. We are unfortunately not able to secure the subsequent histories of a good many of our patients. I do, however, receive an occasional letter from patients who have been away from the sanatorium for a few months, and I recently received a letter from a patient discharged over three years ago, which is of so much interest as bearing on this question of the durability of the cure as to warrant, I think, being included in this report.

[Copy of letter from Capt. John S. Simmons, discharged March 3, 1901.]

OFFICE OF STEAMER JOHN S. SIMMONS,  
*Paducah, Ky., July 4, 1904.*

Dr. P. M. CARRINGTON, *Fort Stanton, N. Mex.*

MY DEAR SIR: I have neglected to write to you up to this time, and while I have no excuse to offer other than an apology, I will endeavor to write you a few lines to let you know how I have been and what I have been doing since I left your place.

On leaving your place I went immediately to West Virginia and built a new towboat, named for the writer, as you will see, and have been operating her in the Tennessee and Cumberland rivers towing railroad ties. I am glad to say that I have had a good business, and have had success. I now have 2 boats and 12 barges, and a good contract to do towing. However, at present writing our business is dull, and will be until after the approaching campaign. I have never had any trouble with my lungs since I left Stanton, but have taken the best of care of myself, but have worked very hard, as this business requires. I do not weigh as much by about 10 or 12 pounds. This valley is a very hard climate to live in, as it is a malarial climate, and I am touched with it all the time here. I would like to locate in a healthier climate, but my business is all here and it is impossible to leave it long at a time. I have \$40,000 invested in my two plants, and you can see that I am a very busy man. I would be pleased to hear from you and to know what success you are having with the patients; also from Doctor Ramus and others.

I can only think that Stanton did me a great deal of good, and that I received all the attention and courtesies that were due me at that institution, and I shall not live long enough to ever forget the kind treatment I received at the hands of the persons in charge of the fort at the time of my stay at that place.

Very truly, yours,

JOHN S. SIMMONS.

#### THE PECOS RIVER FOREST RESERVE.

[I. B. HANNO, *Superintendent.*]

The Pecos River Forest Reserve was created by Presidential proclamation on January 11, 1892, and was increased to its present size May 27, 1898. Its present area is 431,040 acres. Additions thereto are contemplated and examinations are now being made to determine the areas to be included.

This reserve was created to preserve and protect the headwaters of the Pecos, Mora, Santa Fe, Santa Barbara, Tesuque, El Rita Nambe, and Panchuela rivers, and to insure a sufficient water supply for the use of the people as well as to protect timber within the boundaries.

Sheep and goats are not allowed to graze within the reserve. The Department limits the grazing of cattle and horses to 7,500 head during the grazing season, which is from April 1 to December 1.

The reserve is very mountainous and densely covered with timber. It contains few residents, as there is but little agricultural land within its boundaries.

It is a noted camping resort. During the summer months many parties from the States seek the reserve for fishing and recreation. The climate is ideal and plenty of clothing is requisite for comfort even in the summer months.



The people of this Territory are learning the benefits that will accrue to them and their posterity for all future generations by the preservation of the forests.

The building of Government reservoirs for the conservation of water in our arid lands and the reclamation thereof depends upon natural conditions favorable to a continued water supply, which is insured by the preservation of our forests upon the mountain slopes.

Forest fires within our forest reserves during the past year proved a constant source of danger, owing to the continued drought. Fortunately, but two fires occurred, and they did not destroy much timber. Trespasses are becoming less frequent as the residents of the reserve and adjoining territory become more familiar with the rules and regulations governing the reserves.

#### THE GILA RIVER FOREST RESERVE.

[R. C. McCURE, *Forest Supervisor.*]

The Gila River Forest Reserve, New Mexico, was created March 2, 1899, and compriss an area of 2,327,040 acres, and is located in the southwestern portion of the Territory, in the counties of Grant, Sierra, and Socorro. This forest reserve was formerly divided into eastern and western divisions, and was then under the management of two supervisors, is now one reserve and under the management of one forest supervisor, with a headquarters located at Silver City, the most accessible point of location for the accommodation of all citizens having business relations with this office, accessible to daily mail, and affording telegraphic communication with the central office at Washington, D. C.

The supervisor is this year privileged to use 13 forest rangers during the summer months, or, more properly speaking, through the fire season, April 1 to October 31, after which last-named date the force will be reduced to 7 or 8 rangers, this number being deemed sufficient for protection against all timber trespass, doing of special work incident to the winter months, survey of timbered areas, and superintending the work of cutting and removal of timber in all public timber sales and "free use" cases, and the enforcement of grazing regulations, etc., for the doing of which class of work the more capable and more experienced officers are retained.

"Division of labor is a device of civilization," and for the more systematic patrol of this reserve it has been divided into four patrol districts, and one ranger of Class II has been placed in charge of each of these and is made responsible for the work of himself and rangers of Class III assigned with him in such division, and then we have one ranger of Class I who acts as field assistant to the supervisor in remote districts, this because of the excessive amount of clerical work to be done by him in his office, making it impossible for him to spend much time in the personal supervision of these remote districts, and this field assistant is the ever-present representative of the supervisor, instructing, advising, directing, controlling, and helping the men in these distant divisions, and the effect of this effort at "division of labor" has been most gratifying indeed.

The reserve has also been divided into 19 timber districts, each with a name as well as a number, and these "timber districts" are also denominated grazing districts as well, this division into grazing



districts being made necessary for the more equitable and systematic apportionment of grazing areas and distribution of the maximum number of stock that may be allowed to graze, as fixed by the honorable Secretary of the Interior, according to the grazing capacity of the several districts and to better enable forest officers to prevent overgrazing. This division of the reserve also enables us to equitably divide the range between cattle and sheep, two of the most important industries in the Territory—cattle raising and wool growing—both of which it is the purpose of the National Government to foster so far as possible without detriment to forest reserves, and thus it is that restricted grazing is permitted in the Gila River Forest Reserve—this year 150,000 head of sheep and goats and 55,000 head of cattle and horses (sheep and goats from April 1 to August 31, cattle and horses the customary period, usually the year round), not more than 10,000 head of sheep and goats nor more than 7,000 head of cattle and horses to be allowed to any one individual or firm. The stock was distributed as follows:

*Sheep.*

	Head.
District No. 6, west of range line between ranges 14 and 15 west.....	10, 000
District No. 7 .....	10, 000
District No. 10 .....	25, 000
District No. 11 .....	30, 000
District No. 12 .....	8, 000
District No. 13 .....	45, 000
District No. 14 .....	6, 000
District No. 15 .....	3, 000
District No. 16 .....	6, 000
District No. 17, that portion lying north of the line between townships 10 and 11 south .....	7, 000
Total .....	150, 000

*Cattle.*

	Head.
District No. 1 .....	5, 000
District No. 2 .....	4, 000
District No. 3 .....	5, 000
District No. 4 .....	5, 000
District No. 5 .....	3, 000
District No. 6, that portion lying east of the line between ranges 14 and 15 west .....	2, 000
District No. 8 .....	2, 000
District No. 9 .....	7, 000
District No. 17, that portion south of the line between townships 10 and 11 south .....	7, 000
District No. 18 .....	7, 500
District No. 19 .....	7, 500
Total .....	55, 000

It will be noted that sheep are assigned to certain districts and cattle to others, in explanation of which it may be stated that cattle and sheep do not thrive well upon the same areas, and for the purpose of preventing clash between these somewhat antagonistic industries separate areas are set apart to each, and when patented ranches of cattle owners fall within sheep-allotted districts, then we assigned to such owner "home range" in the vicinity of the ranch from which sheep are excluded. There has been some friction between the cattle owners and sheep owners over the "home range" allotments to settlers, most of whom are cattle owners, but it has invariably been

adjusted by forest officers, and has usually been the result of a lack of knowledge of the location of boundary lines all of which can not very effectually be marked on the face of the earth, more especially through parks and mesa lands.

I am loath to attempt a description of the terrible drought through which we have just passed. Waters dried up, springs went dry, and so scarce did watering places become that it finally became a question of water rather than grass with both sheep and cattle owners, and both of these industries suffered heavy loss, cattle owners placing their estimate at about 20 per cent—that is, inside reserve; the loss was much greater upon the public domain—whereas sheep owners claim to have lost no less than 50 per cent of their lambs. Some actually killed the lambs to save the ewes. The drought, which began September 30, 1903, with practically no snowfall during the winter, terminated July 16 of the present year, with local showers at first, but general rainfall after July 22 and copious showers ever since, and as a result the country as a whole at the date of the writing of this report was never in better condition, and the prospect for winter range is excellent. The "rainy season" began early enough for grass to be matured before the coming of frost.

Despite the vigilance of forest officers and the admonition of thousands of posted fire warnings, this drought brought other casualties than loss of cattle and sheep, to wit, one of the largest forest fires known in this reserve since its creation, originating in the very heart of the Mogollon Mountain Range, with its dense carpet of pine needles and much of dead and down timber all dry as tinder, and as a result of which thousands of acres of valuable timbered lands were burned over, killing something like 200,000 B. M. feet of green timber and injuring much more, and but for the heroic effort of brave men—forest rangers and stockmen holding grazing permits—the whole of the Mogollon Mountain Range from one end to the other would have burned. Much of the 200,000 B. M. feet of timber killed by this forest fire could be utilized if there was any demand for timber in the vicinity of the burned district, but there is not and this timber must go to waste; hence the stress laid upon the work of forest officials in protecting against this arch enemy of the forest.

The taking down of all unlawful inclosures, some of which had been standing since long before the creation of the reserve, was sufficient to provoke public criticism by those affected by the order, and the enforcement of this order was the most delicate and difficult task yet assigned to forest officials. But with the fences down the cattlemen have recognized that it is possible, by the leasing of a school section here and there through the reserve, to get along fairly well without these vast areas of unlawful inclosures. A healthy public sentiment now exists favorable to forest reserves, and the necessity for the creation of this reserve, because of its influence on the water flow in the Gila, San Francisco, and Mimbres rivers, and for the protection and preservation of so vast an area of splendidly timbered lands, is no longer questioned by the right-thinking people who have at heart the good of the whole people and are broad enough to concede that "The right of the individual ceases where the right of the public begins."

I will not burden this report with detailed enumeration of the various special-privilege cases, public timber sales, and "free use" cases



now in force in this reserve. Suffice to say that the honorable Secretary of the Interior has very promptly granted all reasonable demands, consistent with forest regulations, made by the people, and the mining operations in the Cooney mining district, located in the foothills to the west of the Mogollon Mountain Range, are being fostered by the National Government in the sale of both timber and fuel at minimum prices—about enough to pay forest officers for superintending the work of cutting and removal of the timber. But the regulations require clean work and economic utilization of the timber cut and a proper cleaning up of the cutting area—this for the protection of the green and growing timber left for a second crop—and under the present administration of this reserve we have been able to so present all applications for public timber sales to the office of the honorable Commissioner of the General Land Office as to insure no delay, and mining men in this camp are no longer heard to complain at the presence of a forest reserve.

For climate and beauty of natural scenery the Gila River Forest Reserve rivals all Switzerland—picturesque beyond portrayal, where mighty peaks clad in perennial verdure uplift to the skies, as pulseless as death, and yet eternal as the shining stars; vast mountain ranges stretching away to the north, ever broken with great canyoned deeps; templed aisles of nature threaded with silver streamlets that chant eternal ovations of praise and power, from the mossy banks of which wild flowers pour oblations sweet upon the air. How sweet to hither come and look through Nature up to Nature's God.

The streams in the higher altitudes are full of fish, and in the deeper recesses of its forests may be found bear, mountain lion, and deer, the last named of which are increasing in number, due to enforcement of Territorial game laws by rangers. There are upon the reserve numerous hot springs, waters from some of which issue from the ground at a boiling point, the best known of which is called "Gila Hot Springs," best known for the reason that these springs are located upon patented lands and have been improved for the use of the public, and are frequented by persons desiring to bathe in their waters, said to contain medicinal properties.

There are numerous cliff dwellings within the reserve, the best known of which is called "New Mexico cliff dwellings," and is one of the ideal scenic spots in the Gila River Forest Reserve, only about 4 miles from the Gila Hot Springs above mentioned and located on the west bank of the west fork of the Gila River. The main cliff is 600 feet in length, having a perpendicular face averaging about 150 feet in height, in which are natural caves of considerable size. These caves were evidently enlarged in places by the hand of primitive man, who built cosy rooms far in the interior of them with rock and mud. These may be visited by the public, but it is made the duty of forest officers to see that no vandalism is indulged in, and notices are posted to this effect.

Forest rangers in this reserve, in addition to wearing a badge of authority (metal badge), "U. S. Forest Ranger, Department of Interior," have voluntarily adopted a uniform of gray color and green stripes, and the good effect makes it commendable, and bespeaks a personal pride and interest on the part of the field officers, for the visible manifestation of which each had the hearty commendation of the forest supervisor.



## PART II—THE INDIANS.

### NORTHERN PUEBLO AND INDUSTRIAL SCHOOL AT SANTA FE.

[CLINTON J. CRANDALL, *Superintendent.*]

The Santa Fe School closed a very satisfactory school year June 30 last. The entire enrollment for the year was 431, divided among the following tribes:

Pueblos	256
Papagoes	95
Pimas	23
Navajos	41
Apaches (Mescaleros)	4
Hopis	3
Utes	2
Western Shoshones	5
Puyallup	1
Cascade	1
Total	431

The Santa Fe Indian School consists of 10 substantial brick buildings, with some minor structures, and this number and the capacity of the school will be materially increased this year by the addition of a girls' home and several cottages for employees. The cost of the plant up to date is approximately \$98,500.

While the work of the schoolroom is given due attention, the more important part of Indian education—industrial training—is emphasized in all ways. The outing system of the Santa Fe School has been so successful as to attract the attention of the Department and calls for special mention. During the summer months the larger boys are permitted to engage in some work away from the school. The school has no farm or other work to employ the boys the entire year, and this therefore becomes necessary; it is just what the Indian boy needs to get out and work for wages, come in contact with other labor and learn the value of money. All the earnings of the boys from the school are carefully guarded and cared for, each boy having a bank account with the superintendent. This summer a party of 40 boys from the school were in Colorado from the 29th day of May till August 22. During that time these boys earned gross \$2,600 and returned to the school with \$1,700. The season was not particularly advantageous for the boys, and on the whole they did very well.

A number of improvements have been made during the year, among which may be mentioned the central steam-heating plant, which cost some \$15,000. A deep well is in process of construction, and at the present writing is down 550 feet. Water was struck at a depth of 100 feet, and has remained at that level. In the entire 500 feet no solid

rock has been encountered; for the most part the drill has been through sand and gravel; some 30 feet or more of the conglomerate rock, which is little less than gravel held together with a natural cement, was encountered. Unless a solid rock is struck there is no show or prospect for artesian water.

The work of the superintendent as acting Indian agent for the Pueblos has claimed no little attention. While little has been done for the Pueblos in the way of issues, and less will be done in the future than in the past, the water and land rights of the Indians have been carefully guarded. The present year the Pueblos, with the exception of Sia, have raised very good crops. The health of the pueblos has been fairly good outside of Santo Domingo and Cochiti. At these two river pueblos there seems to be a repetition of epidemics and an annual large death rate. Diphtheria was prevalent up to late in the spring this year.

The following are the population and names of the pueblos directly under the supervision of the superintendent of the Santa Fe School:

Linguistic family and pueblo.	Popula- tion.
Tano:	
Taos.....	465
Picuris.....	101
Tewa:	
Nambe.....	100
San Ildefonso.....	154
Santa Clara.....	251
San Juan.....	419
Tesuque.....	86
Piro:	
Jemez.....	498
Pecos—extinct.	
Keresan:	
Cochiti.....	217
Sia.....	116
Santo Domingo.....	846
Total.....	3,253

The principal interest to the Pueblo this year has been the handing down of the decision making all Pueblo citizens. This decision may and probably is in accord with existing treaties, and is possibly good law, but the judge who wrote the decision of the case attempts to show from existing records that the Pueblo Indians did under the Mexican Government exercise the right of citizenship. In a few instances this may be true; but when one comes to know the facts, the Indians referred to were no doubt mixed bloods rather than the real Pueblo Indian. I do not believe that the Pueblo Indian ever attempted to become a citizen under the Mexican Government any more than he does under the United States Government. He objects to citizenship, and those that have his interest at heart will do all they can to win his fight for him. As a matter of fact, the Pueblo Indian is no more fit for citizenship than the wildest Apache. He can neither read nor write, nor can he speak English. He must depend upon others to guide him; and as he is in fear of the native citizens, he will simply become a tool in the hands of the politicians. Further, it means also that the Pueblo must bear their share of taxation if they become citizens. This they might be able to do, but they will be excessively taxed. The citizens have no love for the Pueblo.

They will not only be obliged to bear an honest share of the taxes, but in many cases they will be taxed to excess, and as a result their lands will be sold and taken from them. The Pueblo have little money, and are in danger of suffering as few other Indians have suffered. The peaceful Indian, the friend of the explorer and pioneer, the Indian that alone between the two oceans raised his own bread and had a fixed home, now is in danger of having that little home taken from him.

#### SOUTHERN PUEBLO AND THE ALBUQUERQUE INDIAN SCHOOL.

[JAMES K. ALLEN, *Superintendent.*]

The Albuquerque school is located  $2\frac{1}{2}$  miles north and west of Albuquerque.

The farm consists of 66 acres; the soil is exceedingly poor, being impregnated with alkali; not to exceed 15 acres under present conditions will produce crops. But it is believed that if an abundance of water can be procured and ample drainage provided the soil could be reclaimed; however, at considerable cost. A few patches of alfalfa have been sown and irrigated principally from the pumping system of the plant. An item in the appropriation for the present year provides funds for the purpose of additional farming land adjacent to the present school land.

I do not recommend the purchase of to exceed 30 acres of additional land for this plant. I believe 20 acres is ample for vegetables, and an additional 20 acres for alfalfa will be all or more than the school force can handle in this locality with profit. A portion of the land now owned by the school should be redeemed by washing and fertilizing. I have investigated to some extent the manner of reclaiming adobe and alkali soils, and am of the opinion that it is practicable where water can be obtained in abundance; but I do not consider it practicable to attempt farming and gardening at this school on a large scale. There are two gardeners living in the immediate neighborhood of the school who are handling small farms to advantage, but at heavy cost. One of these has a farm of 40 acres, which requires annually 1,000 loads of fertilizer, at \$1 per load; he pumps 400,000 gallons of water daily, and employs on an average 18 men, at \$1 a day; his total income is about \$15,000 and his expenditures from \$10,000 to \$12,000 annually. The other gardener cultivates 51 acres. His sales are about \$16,000 a year and his expenditures from \$12,000 to \$13,000 a year.

It will be observed that these two gardeners make from \$3,000 to \$4,000 per annum, but the strictest economy is required in the management of their farms, which would not be maintained if these gardens were operated by a school superintendent and worked by civil-service employees and Indian pupils. Therefore I believe only a small farm is practicable, and it should be under the immediate supervision of an intelligent, trained farmer who has made a scientific study of the management of the alkali and adobe soils. The salary should be sufficient to secure a competent man.

*Buildings.*—There are about 30 buildings all told in the plant. A few of these are excellent, but some of them are old and infested with vermin. A very liberal appropriation of \$50,000 was made by the



last Congress for rebuilding and rearranging the plant, which is now being done. Originally there was no systematic plan for the arrangement of the various structures, which were added here and there, as suited the fancy of the one in charge. It is proposed to erect from the appropriation a new dining room and kitchen, a new laundry, and a new dormitory for the boys, all of which buildings are needed.

*Water system.*—The water for domestic purposes is obtained by pumping, a small steam plant being used, which is inadequate for extensive irrigation. There should be provided a gasoline or electric pumping plant to furnish water for irrigating, which will cost in the neighborhood of \$6,000 or \$7,000. This means of obtaining water in this section is practicable. There is an abundance of water a short distance below the surface at all seasons of the year. A milling plant located within a mile of the school pumps daily 1,000,000 gallons of water without apparently diminishing the supply.

To obtain water from the river for irrigating is not practicable, for the reason that it is not always obtainable. Besides, the cost of maintaining ditches from the river is very great. The Rio Grande carries with it a large amount of sediment, which quickly fills up the ditches and requires them to be constantly cleaned out at a heavy expense.

*Lighting system.*—The school is lighted by electric current furnished by the Albuquerque Gas, Electric Light and Power Company, at a cost of \$1,200 per annum. No change is recommended for this system at present.

*Heating system.*—The school is heated by ordinary coal and wood stoves. Four hundred tons of coal and about 75 cords of wood are required annually. This system should be replaced with a steam heating plant, not only for economy, but to insure safety against fire.

*Pupils.*—A stigma has rested on this school for years past on account of the Mexican element, of which the pupils were largely composed, but by order of your office 216 pupils were sent out last year and their places filled from the Pueblos and Navaho tribes with full-blood pupils. The average enrollment of the school for the year, by quarters, was 332.5. The average attendance for the year was 308.1. About 160 of these were full-blood Navaho. The remainder were from the Laguna, Isleta, Acoma, Santa Ana, and Zuñi pueblos, with the exception of 5 Apaches from the Mescalero and San Carlos agencies.

For the most part the pupils are very desirable. There was but little discontent throughout the year. For several months there were no desertions, nor was the thought of it even entertained by the management.

*Literary work.*—The progress made in schoolroom work was fair, considering the fact that a large per cent of the pupils were brought in from the camps at the beginning of the school year and knew but little of the English language; perhaps 60 per cent of the pupils were unable to speak or even understand English. With the exception of a small class of old pupils the entire school was primary.

*Sanitary conditions.*—The sanitary conditions of the plant are good. During the year we had a large number of cases of mild type of diphtheria, none of which resulted fatally or excited any degree of

alarm. We had a few cases of pneumonia, 2 of which resulted in death, and 4 cases of tuberculosis, all of which resulted in the death of the pupils. When developed sufficiently to determine the nature of the disease, they were sent to their homes.

*Public sentiment toward the school.*—Public sentiment among the Navaho has been very favorable during the year, pupils being obtained much easier than before. The kindly feeling among the citizens of Albuquerque and surrounding country has assisted the management very much toward the success of the school. Upon the whole, the prospects for building up a first-class industrial school at this place are all that can be desired.

*Agency.*—There are under the supervision of the Albuquerque superintendent 6 pueblos, namely, Acoma, Laguna, Isleta, Sandia, Santa Ana, and San Felipe, with an approximate population of 4,000. These Indians are living upon tracts of land originally granted to them by the Spanish Government, and which have been patented in the last fifty years by the United States Government. I shall treat each of these pueblos separately and in the order written above.

The Acoma grant contains 95,791 acres and is located about 75 miles south and west of Albuquerque. Probably 5 per cent of the land is suitable for agricultural purposes. A small stream of water flows across the northern end of the grant which is cultivated by the Indians. The crops were excellent this year, the farms being located on the upper end of the stream, which enabled them to secure first the water from the San Jose River for irrigating. The cultivated acreage, number of stock, and other data will be found in tabular statement below.

A description of the customs and habits of the Acomas will apply to all other Pueblo under my supervision.

They elect annually, on the 1st day of January, a governor, lieutenant-governor, war chief, and secretary, who are recognized as authority during their administration. They meet at the call of the governor in council to discuss public matters or settle disputes among themselves. The governor, or the council, which consists of the older men of the pueblo, try cases of misdemeanor or any violation of their laws, and determine the punishment, which is rigidly enforced, and generally with justice. This pueblo is in want of modern agricultural implements. All their crops are planted, cultivated, and harvested in a crude way. The wheat is cut with sickles and tramped out with horses.

The Acoma village, located near the center of the grant, is one of the oldest villages in America. It was occupied by these people when Coronado first visited this section, about 1541. In recent years they have built houses along the San Jose River at Acomita and McCartys, on the Santa Fe Railroad, which they occupy during the crop season, making frequent journeys back to Acoma, about 12 miles distant, to hold religious worship, which consists of a combination of the Catholic form and their original fetish rites. This pueblo numbers 737.

The Laguna tribe is divided into several pueblos, namely, Laguna, Pagate, Mesita, Ensinal, Paraje, Casa Blanca, and Seama, the total number of Laguna Indians being 1,366. In some respects these people are more progressive than others of the Pueblos, notwithstanding the fact that they have less water for irrigation than many of the



other Pueblos. Their grant consists of 125,225 acres, which, like the Acoma and other Pueblos, was granted to them by the King of Spain in 1689 and afterwards confirmed and deeded to them by the Government of the United States. They take more kindly to schools than any of the other Pueblos, and upon the whole are better workers, perhaps, than the others are. Last year the Santa Fe Railroad employed a large number of the young men to work on the road and in the car shops at Albuquerque, Gallup, and Winslow, the greater portion working in the shops. They were paid at Albuquerque \$3,956.11 for the year. The Laguna Indians received at Gallup \$10,862.88 and at Winslow \$28,224.17, or a total of \$42,043.16. It is possible that a number of these workmen were from other Pueblos than the Lagunas, but the larger percentage were Lagunas. They were employed as car-repair helpers, inspector helpers, stationary engineers, and car inspectors, some receiving as high as \$85 per month. The Laguna Pueblos are the only Pueblo Indians who are Protestants. A missionary is stationed at Laguna and holds services regularly at the various pueblos, services being held in the school-houses and often conducted by the Indians themselves.

The Isleta pueblo is located 13 miles south of Albuquerque; the grant contains 110,080 acres. These people are Catholics. They make their living by tilling the soil; a few of them work for railroad companies, and a few are merchants. They obtain water for irrigation from the Rio Grande, and have an excellent system of irrigating ditches, which are kept in good condition. These Indians are a little more progressive in some respects than even the Lagunas; they have better agricultural implements and a larger number of wagons; one of them owns and operates a thrashing machine. One evil which prevails among them is the manufacture of wine from home-grown grapes; the wine is used by the Indians. The population of this pueblo is 992.

The Sandia pueblo is located 9 miles north of Albuquerque; the grant consists of 24,187 acres; the soil is excellent, and fair crops are raised by the Indians. They have a larger percentage of good agricultural land than any other pueblo. These are also Catholics. They will not patronize Government schools, and are of rather a low type of Indians, having intermarried among themselves for a great many years. The total population of this pueblo is 79.

The Santa Ana pueblo is located north and west of Bernalillo about 4 miles. The grant consists of 17,360 acres. Their agricultural land is located along the Rio Grande; a portion of it is very good; they raise fair crops, having free access to the river for water for irrigating. They have placed every eligible pupil in the Albuquerque school. The total population of this pueblo is 232.

The San Felipe pueblo is located 10 miles north of Bernalillo; the grant consists of 34,786 acres; perhaps 10 per cent of this grant is good agricultural land; the Rio Grande passing through it, provides plenty of water for irrigation. On account of their small ponies and want of agricultural implements, and the primitive methods of planting and harvesting crops, they produce little more than sufficient to subsist on. The total population of this pueblo is 488. The people adhere to the Catholic religion, but include in their church services many of the old rites of their ancient belief and form of



worship. They also oppose sending their children to Government schools, except to the day school located at the pueblo, which has been fairly well patronized during the past year.

*Taxation.*—Last March the supreme court of the Territory decided that the Pueblo Indians are citizens of the United States, and as such subject to taxation. The decision has been appealed to the Supreme Court of the United States, with a possibility that it will be affirmed. This decision brought about a strong opposition on the part of the Indians. In April a convention was called of the governors and other leading men of the Pueblos, which convened at Santa Fe. They petitioned your office, the Secretary, and even the President, to secure some action by Congress or otherwise by which the Pueblos would be exempt from this burden. Nothing was accomplished, however. Recently another convention was called for the purpose of selecting delegates to visit the Indian Office for the purpose of urging the passage of a bill for their relief. In this convention some discord prevailed, a portion of the delegates recognizing that unless some action is taken by Congress they must submit to the inevitable, other delegates expressing themselves as being ready to oppose the collection of taxes by force if necessary, and oppose sending any delegate to Congress.

While a few of these Pueblo Indians are ready for citizenship, and have indicated the same by their energy and willingness to accept services from the railroad companies and elsewhere, and by their accepting the benefits of schools and churches, a large percentage of them are unable and not yet enough advanced along the lines of civilization to take upon themselves the burden of citizenship. It is my opinion that in the event taxation is imposed it will be but a short time before the masses of the New Mexico Pueblo Indians will become paupers, their lands will be sold for taxes, the whites and Mexicans will have possession of their ancient grants, and the Government will be compelled to support them or witness their extermination.

*Day schools.*—There have been maintained at this agency nine day schools during the past year. One is located at Laguna, one at Paguete, one at Paraje, one at Seama, one at Acomita, one at Isleta, one at San Felipe, and one established at Mesita about February 1. At the beginning of the year a school was maintained at Santa Ana for the benefit of the Indians of that pueblo, the enrollment being 12. The parents were induced to transfer their children to the Albuquerque school and the one at the pueblo closed. At the same time authority was given for establishing a day school at McCartys, which opened January 1, and maintained an average attendance of 19 during the remainder of the year.

All the day schools under my supervision made excellent progress. There were enrolled in these schools during the year 354; the average attendance was 241.

Canyon City Cajo is located 40 miles west of Albuquerque. In this canyon a band of Navaho located about forty years ago. It numbers about 170, and is less nomadic than the Navaho usually is. During the last year this band was placed under the supervision of the superintendent of Albuquerque school. Authority has been

granted to establish a day school there, the Indians expressing a willingness to send their children to school.

*Estimate of produce raised, amounts earned, and stock owned by Indians.*

#### PRODUCE RAISED.

[Reported in bushels.]

	Wheat.	Oats.	Corn.	Onions.	Beans.	Vegetables.	Hay.	Wood.
Laguna.....	1,221	-----	914	260	65	80	53	843
Acoma.....	2,925	-----	1,000	50	-----	15	125	385
Isleta.....	10,000	1,200	14,000	61	30	120	400	-----
San Felipe.....	1,000	-----	2,000	50	150	100	200	300
Santa Ana.....	300	-----	270	20	15	20	75	-----
Sandia.....	800	-----	300	-----	-----	-----	50	-----
Total.....	16,246	1,200	18,484	441	260	335	903	1,528

#### VALUE OF PRODUCTS OF INDIAN LABOR.

	Sold to Government.	Sold otherwise.
Laguna.....	\$375.00	\$5,000.00
Acoma.....	185.00	5,000.00
Isleta.....	100.00	5,000.00
San Felipe.....	-----	200.00
Santa Ana.....	-----	100.00
Sandia.....	-----	-----
Total.....	660.00	15,300.00

#### STOCK OWNED.

	Horses.	Mules.	Burros.	Cattle.	Swine.	Sheep.	Goats.	Fowls.
Laguna.....	1,257	109	215	2,456	59	15,646	990	980
Acoma.....	1,000	50	150	700	50	10,000	200	500
Isleta.....	300	20	26	150	100	6,000	500	300
San Felipe.....	200	60	100	200	30	1,000	200	500
Santa Ana.....	320	15	10	40	13	-----	-----	50
Sandia.....	90	15	12	21	10	50	75	48
Navaho.....	1,000	20	12	150	-----	2,000	500	-----
Total.....	4,167	289	525	3,717	262	34,696	2,465	2,378

#### INDIAN POPULATION AT AGENCY.

[Census of June 30, 1904.]

Name of tribe.	Males over 18 years.	Females over 14 years.	Males under 18 years.	Females under 14 years.	Total of all ages.	Males between 6 and 18.	Females between 6 and 18.
Pueblos:							
Laguna.....	401	427	285	252	1,365	187	205
Acoma.....	189	234	188	126	737	120	93
Isleta.....	338	329	172	140	979	119	100
San Felipe.....	203	142	98	46	489	91	60
Santa Ana.....	96	64	34	30	224	20	24
Sandia.....	25	23	17	14	79	8	7
Total.....	1,252	1,219	794	608	3,873	545	489
Navaho tribe.....	41	52	41	36	170	30	31
Grand total.....	1,293	1,271	835	644	4,043	575	520

## JICARILLA AGENCY AT DULCE.

[H. H. JOHNSON, *Superintendent in charge.*]

The census taken June 30, 1903, shows a population of 782, divided as follows: Male, 380; female, 402; of which 234 are children of school age. This census shows that the tribe is increasing slowly.

My efforts during the past year to straighten out the allotment question on this reservation forces me to the conclusion that it will be absolutely impossible to identify the allottees with their allotments. There are 205 living members of the tribe who were certainly allotted, but who can not be identified with any allotment. These people neither know the names by which they were allotted nor do they know the location of their allotments. In view of the difficulties presented in dealing with the present allotment schedule, and also the fact that irrigation construction has made a few of the allotments very valuable, while the remainder are of little value, I would respectfully recommend that necessary action be taken to wipe the present schedule out of existence, and that a new allotment be made on a different basis, viz, that each member of the tribe now living be allotted 10 acres of land that can be irrigated, and that the remainder of the reservation, which is only grazing land, be divided equally among the members of the tribe.

On account of having an unusually favorable season the tribe harvested a considerable quantity of grain and hay last summer. This added very materially to their means of support. The present season has been very dry, and the tribe will raise nothing.

I am still adhering strictly to the policy adopted last year in the matter of issue of rations. None but the aged, the infirm, and the widowed, with those dependent upon them, are allowed to receive rations. These classes make about 35 per cent of the total population of the tribe, but the number can not be reduced without causing the helpless to suffer, as I have personally investigated each individual case.

The year just closed has been one of the most prosperous in the history of the tribe, owing to the exceptionally favorable season and the large amount of outside work available. It is estimated that the tribe has received as a result of their efforts during the year about \$25,000. This money was divided as follows: Paid by the Government for labor on irrigation construction, \$11,000; paid by the Rio Grande and Southwestern Railroad for labor, \$5,000; earned by Indians as laborers on ranches and at sawmills, \$2,000; proceeds of sales of baskets, beadwork, etc., \$3,000; from sales of farm products, stock, etc., \$4,000.

The irrigation construction accomplished during the year consists of two reservoirs, which will irrigate about 4,000 acres of excellent land. In addition, about 7 miles of ditch has been built and about 2,000 acres of land has been cleared ready for the plow. There has been no new road work done during the year, we having confined our efforts along this line to repairs of the old roads. The recent purchase of a quantity of improved road machinery will greatly facilitate this work, and we expect to devote considerable time to road building during the coming year.

I am pleased to report that drunkenness has very materially decreased. This is due to the fact that an unrelenting campaign has



been waged against the bootleggers, and also that there has been plenty of work to keep the Indians occupied most of the time.

The Jicarilla training school opened October 19, and by January 15 there were 130 pupils in attendance, which is 5 more than the rated capacity of the school. During February and March the school was visited by epidemics of both chicken pox and measles, but all the pupils recovered nicely.

The schoolroom work has been very satisfactory, and when it is taken into consideration that there were no English-speaking pupils at the beginning of the year, the progress shown is certainly remarkable. Pupils have been detailed to the various departments, as is customary, and their progress along industrial lines has been very satisfactory.

The building of the hospital and barn, already authorized, will add very materially to the school plant. The greatest need at present is a suitable assembly hall and schoolhouse.

#### MESCALERO AGENCY.

[JAMES A. CARROLL, *Superintendent.*]

The last census of the Mescalero tribe of Apaches shows a population of 464, as follows:

Males 18 years and over.....	107
Males under 18 years.....	88
Females 14 years and over.....	174
Females under 14 years.....	95
Total .....	464
Children between 6 and 16, 105.	

The progress of these people as a whole is not sufficiently manifest to afford much encouragement. While certain individual members of the tribe have renounced those inherited tendencies and forsaken those racial characteristics which have so long constituted barriers to their advancement, it is a fact that a great many members, notably the old women, have determined that they will never, no, never, abandon their nomadic habits. They were born savages, have relapsed into savagery, and will die savages. They cling tenaciously to savage customs, cultivate that hatred of the white man which is innate, exert every influence to prevent the young from adopting the pursuits of civilized life, and thus constitute a millstone around the neck of the tribe against which the younger element must constantly struggle or else be drowned in that sea of barbarism from which the white man is endeavoring to rescue them.

A realization of this condition has stimulated this office to work with renewed energy to repress the evil and advance the remedy. The policy of rewarding the progressive by a generous issue of the articles furnished by the Government and imposing privation upon others who obstinately persist in refusing to adopt civilized habits has been productive of good results. It has brought forcibly to them an object lesson and the realization of the fact that, while the Government is disposed to be kind and generous to them if they will accept the instruction and advice imparted through its representatives, it will not support them in idleness.

The past season has witnessed the most serious drought this sec-

tion of country has experienced in fifteen years. The summer of 1903 brought no rains and the succeeding winter was marked by the lightest snowfall ever known. In consequence, the soil was so dry that oats did not germinate until late in June, after the summer showers had set in, and the yield will necessarily be light unless, perchance, the season should be longer than usual, in which event the grain will mature. The yield of wheat, although not as good as last year, will enable the Indians to furnish the flour called for on the annual estimate. The drought also affected the sheep industry in that the Indians were not able to save quite 50 per cent of their lambs. The wool clip exceeded that of 1903. During the current fiscal year the Indians will furnish 15,000 pounds of mutton for the school.

The grazing and labor permit systems are still operative on the reservation, and the results attained, especially from the former, are most satisfactory. The annual revenue now being derived from the former is about \$8,000. Of this sum less than half is distributed per capita, the remainder being employed in enlarging, improving, and facilitating the stock and agricultural interests of the Indians.

The mortality continues excessive. Tuberculosis has this little tribe in its grasp, and unless approved facilities are provided for isolating and treating the afflicted the Indian problem at Mescalero will soon settle itself.

The small band referred to in the annual report for 1903 as living in the Republic of Mexico was permitted by that Government to return to the United States in June last. This band, comprising a membership of 37, had been separated from the tribe for more than a quarter of a century. Their arrival at the agency, the reuniting of families, the realization that many loved ones had gone to their last reward, the cries of joy commingled with wails of anguish, the tears, the shrieks, the groans—what tongue can tell, what pen describe, what brush portray the pathos of that scene! The erstwhile wanderers lived among the Mexicans so long that they have lost many racial characteristics. Indeed, they seem to have thoroughly acquired the habits, language, style of dress, and manner of living of the people with whom they have so long been associated; and they are industrious, or, rather, they are not averse to work. The influence of the newcomers should be helpful to the civilization of the tribe.

It is with no small degree of pride that the Mescalero School can be referred to as the only institution of its kind in the service where the attendance exceeds 100 per cent of the scholastic population. And it is no less gratifying to observe the excellent results obtained throughout all the departments. The character of the work done will compare favorably with that of corresponding grades in public schools. This might not seem a correct comparison to the casual observer, since the Indian child has yet to overcome his inherited racial stolidity, which causes him to appear to a disadvantage in all work requiring oral expression. The class-room work is in charge of a kindergartner and two teachers. The course of study is essentially that prepared by the superintendent of Indian schools, modified only by that latitude in adherence to a curriculum which is made necessary by certain peculiar local conditions. The greatest obstacle with which instructors must contend is attributable to that communistic social

system of which the Indian has always been a part, and which has deadened his originality and made him painfully conscious of the opinions of his associates.

The improvements made during the past year embrace the following: A new sawmill plant, equipped with modern machinery and located in the Tularosa Valley, 10 miles above the agency; a planing mill and woodworking shop in connection with the power house; a laundry and sewing room; a granary; three cottages for agency employees; four cottages for Indian employees, and a sewerage system. The school employees' quarters were not finished, this owing to the lack of seasoned lumber. It is gratifying to know that the plans and specifications for two dormitories, a dining hall and kitchen, and a water system have been approved by the Department, and that bids for their construction are to be invited within a few days. On the recommendation of this office the contractor will be authorized to purchase from the agency sawmill all necessary lumber required in the construction of the proposed buildings, thus saving the Government from \$5,000 to \$7,000.

In conclusion, this office extends its thanks to the honorable Commissioner of Indian Affairs for his continued support, to Inspector James E. Jenkins for valuable counsel, and to a corps of employees whose efficiency and fidelity to duty are worthy of especial mention.

The following statistics accompany the report for the fiscal year 1904:

Population of tribe.....	464
Males .....	195
Females .....	269
Indian children of school age (between 6 and 16).....	118
Males .....	50
Females .....	68
Indians who wear citizens' dress wholly.....	464
Indians who can read.....	155
Indians who can use English enough for ordinary intercourse.....	185
Formal marriages among Indians during year.....	2
Births .....	14
Deaths .....	26
Indian criminals punished by civil authorities during year.....	2
Acres cultivated during year:	
By Government.....	62
By Indians.....	1,000
Lumber sawed on reservation.....feet.....	365,302
Timber marketed by Indians.....do.....	26,000
Wood cut by Indians.....cords.....	165
Freight transported by Indians.....pounds.....	238,087
Amount earned by such freighting.....	\$523.63
Value of products of Indian labor sold to Government.....	\$4,607.92
Value of products of Indian labor sold otherwise.....	\$5,655.90

*Produce raised (estimated).*

	By Govern- ment.	By In- dians.
Wheat.....bushels.....	0	2,700
Oats.....do.....	0	5,000
Corn.....do.....	0	150
Turnips.....do.....	100	0
Onions.....do.....	20	0
Beans.....pounds.....	0	3,000
Other vegetables.....do.....	5,000	5,000
Hay.....tons.....	40	50



*Stock owned.*

		By Gov- ernment.	By In- dians.
Horses .....	number..	14	800
Mules .....	do.....	0	20
Burros .....	do.....	0	60
Cattle .....	do.....	39	0
Sheep .....	do.....	83	6,500
Goats .....	do.....	18	1,750

*Cash income of the Mescalero Apache Indians for fiscal year 1904.*

## Received from Government:

Sale of 19,999 pounds mutton.....	\$1, 699. 92
Sale of 1,800 pounds beans.....	90. 00
Sale of 38,000 pounds flour.....	950. 00
Sale of 2,000 pounds onions.....	80. 00
Sale of 50,000 pounds oats.....	750. 00
Sale of 26,000 feet timber.....	78. 00
Sale of 1,000 fence posts.....	100. 00
Sale of 165 cords wood.....	660. 00
Sale of 25 tons hay.....	200. 00
Transportation of supplies.....	523. 63
Transportation of lumber and shingles.....	914. 24
Irregular labor at agency and school.....	3, 614. 73

Total ..... 9, 660. 52

## Received from other sources:

Per capita payment from proceeds of grazing.....	3, 213. 00
Sale of wool and mohair.....	3, 355. 90
Sale of farm and ranch products.....	980. 00
Sale of curios.....	1, 320. 00
Labor performed for permittees and others.....	750. 00

Total ..... 9, 618. 90

Total income ..... 19, 279. 42

Per capita income, \$41.55.

## NAVAHO AGENCY, N. MEX., AT FORT DEFIANCE, ARIZ.

[REUBEN PERRY, *Superintendent.*]

The agency is located at Fort Defiance, Ariz., 30 miles northwest of Gallup, N. Mex., which is our railroad and telegraphic station, and which is now connected with the agency by a telephone line. This agency comprises the south half of the Navaho Reservation, and something like 12,000 Indians belong to the same.

The Navaho is a superior Indian, an energetic worker, and is generally peaceable and quiet, and is making some progress. Their reservation is a very large area of barren country, fit only for grazing, with the exception of small areas in various places where the land can be irrigated. Such places are made use of for farming purposes, while their flocks of sheep and cattle graze on the other territory and some of their herds are kept off of the reservation.

*Earnings.*—The Navaho are employed at all places in this country where labor is desired. They receive employment in the beet fields, at various mines, and on the railroad, and generally are given the preference over other Indians and Mexicans. At the present time

quite a number of the Navaho are employed at the Zuñi Reservation on the improvements the Government is installing there. I have encouraged the Indians to leave the reservation and find employment where they can, and they seem willing to go most any place to secure work. The railroad has made a difference of 10 cents per day between the Navaho and Mexican, in the Navaho's favor. The Government has paid the Indians for labor, beef, mutton, hay, freighting, etc., during the year sums as follows:

Irregular labor -----	\$2, 383. 56
Beef and mutton -----	5, 843. 24
Hay -----	293. 90
Telephone poles -----	1, 222. 25
Wood -----	1, 480. 00
Hauling coal -----	1, 565. 85
Freighting -----	3, 779. 64
Total -----	16, 568. 94

The greatest source of income the Navaho has is from his sheep, goats, and sale of the Navaho blanket. In the neighborhood of \$500,000 are obtained from these industries. The Navaho blanket has become well known and is in demand everywhere.

*Improvements.*—During the year an adobe cottage and frame barn were erected at Chin Lee, the former at an expense of \$866, and the latter by agency employees (at no expense to the Government) for use of the field matron; a stone cottage at an expense of \$2,556 was erected at the agency, and a telephone line at an expense of about \$2,700 built between the agency and Gallup. The roads in the vicinity of the agency and Little Water School have been improved and other minor improvements made at the agency. The agency sawmill has been put in working condition and has sawed first-class lumber, 221,000 feet, during the year. The labor in making these improvements has been performed largely by the Indians. A number of the Indians are excellent stone masons, some do good adobe work and some are learning to do carpenter work.

*Education.*—The Little Water School, under the supervision of Mrs. Emma De Vore has done good work. The attendance has been large and could have been larger had the capacity and conveniences permitted. This school is located 35 miles northeast of the agency, and the plant consists of one stone and three adobe buildings; one of the adobe buildings, containing dining room, kitchen, sewing room, one schoolroom, and employees' rooms, having been completed during the year. By the addition of this building the capacity of the school was increased from 80 to 125. A new barn is in course of construction, a new laundry building was being erected, but on June 17, a gasoline explosion occurred in the pump house and the result was the destruction by fire of the new laundry, old laundry, and pump-house buildings. The school needs more buildings, a good water system, and improvements in the sewer system.

The Navaho school is located at the agency and has a capacity of about 180, but during the year the enrollment has been 280, with an average attendance of 211. Good progress has been made in all the departments of this school considering the fact that a large majority of the pupils at the beginning of the year could not speak English. A number of the boys were given instruction in blacksmithing, wagon

work and carpentry, shoemaking, gardening, fence building, and engineering under the direction of agency and school employees; while the girls received training in cooking, housework, sewing, weaving, etc., under the supervision of the matrons, cooks, laundress, seamstress, and weaver.

*Improvements.*—During the year the garden has been enlarged by building a new road and setting the fences out to include some good land through which the old road ran; a number of old unsightly buildings have been torn down and removed, the grounds have been inclosed by woven-wire fencing, thus throwing the traffic back of the buildings instead of across the school grounds. Steam machinery has been installed in the laundry, two respectable-looking coal houses built, grounds improved and beautified, 1,400 feet of plank sidewalk built, and other minor improvements made.

*Needs of the school.*—The dining-room building should be enlarged so the capacity would be 250 instead of 140. By this improvement needed dining room and kitchen for pupils and employees' mess and rooms for employees would be provided. A school building containing 5 class rooms and assembly hall, a hospital building, a barn, and a girls' dormitory building should be erected; a complete sewer system, a heating plant, and an electric-light plant should be installed; land for farming obtained and land for grazing purposes inclosed by fence; the agency barn should be converted into shops for blacksmith and wheelwright, and the agency shop into carpenter and shoe shops for school. Estimates for most of these improvements have been filed with the Department and it is to be hoped that favorable action will be taken on part or all of the matters in the near future.

At St. Michaels, 8 miles southwest of the agency, is located a school under the supervision of the Catholic sisters. They have a very nice plant, take care of about 80 Navaho pupils, and have done excellent work.

As an indication that the Navaho is becoming more favorably impressed with the benefit of education, 98 pupils have been transferred from the two schools and direct from the reservation to non-reservation schools, and from 150 to 200 pupils have been placed in the Albuquerque School by the Navaho residing off the reservation.

*Sanitary conditions.*—The health of the Navaho has been unusually good this year, no serious epidemics having visited them. Tuberculosis in its varied forms is the prevailing disease, and is due to heredity. They are bothered more or less with rheumatism and diseases of the eye, due to the sand-laden winds and to the fact that in heating their hogans as they do, their eyes are injured by the escaping smoke. These troubles will become less as they improve their ways of living, which improvements depend largely upon the example of the returned pupil.

The sanitary condition of the school has been much improved during the year, and with the further improvements planned can be made nearly perfect.

*Missionary work.*—Rev. C. H. Bierkemper, of the Presbyterian denomination, is located at Ganado, 35 miles west of the agency. Reverend Bierkemper, in addition to conducting a day school part of the year, has assisted the Indians in improving their roads, developing water for themselves and their stock, and in other ways. He has considerable influence with the Indians and is doing excellent work.



Rev. R. B. Wright, of the Baptist faith, has charge of the mission work at Two Grey Hills, about 45 miles north of the agency, while Rev. H. J. Freijling and Rev. Brink, of the Dutch Reformed Church, are located, respectively, at the Navaho and Little Water schools.

Mrs. Henrietta G. Cole, field matron, is located at Chin Lee, about 50 miles northwest of the agency. Mrs. Cole is doing excellent work.

An irrigation engineer has been employed to make plans and estimates for various irrigating projects on the reservation, and it is hoped that a portion at least of these proposed improvements will be made during the current year. The employment furnished the Indians by such work would be of great immediate benefit to them, and the improvements made would provide permanent homes for a large number.

I have to acknowledge pleasant visits by Supervisor Charles, Inspectors Churchill and Chubbuck, and recently by Inspector Code.

### SAN JUAN INDIAN TRAINING SCHOOL.

[WILLIAM T. SHELTON, *Superintendent.*]

*Location.*—The San Juan Training School, now in course of erection, is located on the San Juan River, in New Mexico, 35 miles west of Farmington, N. Mex., and 70 miles southwest of Durango, Colo., the nearest railroad point. The location of this school is an ideal one, situated as it is in the midst of a large cottonwood grove, on a good tract of fertile land, and near the center of the Indian population. The climate is unsurpassed, and good pure water for domestic purposes is secured from shallow wells. The San Juan River furnishes an abundance of water for irrigation.

As yet only three buildings have been erected at this school. It is hoped that the school plant will be completed and the school in full operation by September 1, 1905.

*Area of reservation and resources.*—The portion of the Navaho reservation under the charge of this superintendency comprises an estimated area of 5,000 square miles, viz, 2,000 square miles in northwestern New Mexico, 2,250 square miles in northeastern Arizona, and 750 square miles in the southeastern portion of Utah.

The greater portion of this reservation is suited for grazing purposes only; in fact, many thousands of acres of this land is a barren waste and of no value whatever. Extensive forests of valuable pine timber, which have never been disturbed, are growing on the Carriso Mountains (located in the center of the reservation), and on the Lukachuka Mountains (located near the southern boundary).

Only a very small portion of the reservation is suitable for farming purposes, the greater part of which is located along the San Juan River, commencing near Farmington, N. Mex., at the eastern boundary of the reservation, and extending northwest to the western boundary of the reservation near Bluff City, Utah. A small quantity of farming land is located in the foothills near the mountains, where springs of water are found and utilized for irrigating small crops.

Extensive veins of bituminous coal of excellent quality underlie a portion of the reservation, extending north and south. Opposite Fruitland, N. Mex., where the San Juan River has cut its course

through a mesa, the rocks and earth have caved into the river and exposed a bank of coal of good quality 200 feet wide and 30 feet thick. The overburden covering this coal is less than 30 feet thick, 4 feet of which is sandstone lying directly over the coal. Outcroppings and indications show that this vein of coal extends some 50 miles south, and is without doubt the most extensive coal field in the southwest. When the contemplated railroad reaches this point the coal will no doubt prove of great value to these Indians.

*Indians; population.*—On account of the extensive area of this reservation, and owing to the fact that a majority of these Indians frequently change their location in order to find desirable grazing for their herds of sheep and goats, I find it impossible with my present small force of employees to take an accurate census. The total population is estimated to be 7,000. Of this number there can not be less than 2,000 children of school age (6 to 18 years), with practically no school facilities to accommodate them.

About 75 of these children are attending the Fort Lewis, Colo., school; 12 are enrolled at the mission school located near Farmington, N. Mex., and supported by the Methodist Church; 4 are enrolled at a mission school just off the reservation at Jewett, N. Mex., supported by the Presbyterian Church; and 10 are enrolled in a school at Aneth, Utah, on the reservation, which is supported by contributions secured through the efforts of a nonsectarian missionary named Antes. At all of the schools referred to above the children are being well provided for and are making good progress. When the San Juan school is in operation it will provide for only a very small portion of the children of school age on this reservation.

*Progress.*—The Indians living east of the Arizona line are by their own efforts making rapid strides toward progress. Those living along the river are taking out ditches and utilizing the land available for farming purposes. They have by their own efforts taken out some 12 irrigating ditches; and the results of this year's crops have greatly encouraged them, being more than double the amount raised in any one year heretofore.

A number of substantial stone houses have been erected on different parts of the reservation by the Indians themselves, and a great many more would be built if the Indians could secure lumber for doors, window frames, and flooring. A portable sawmill located in the Carriso or Lukachuka mountains to saw lumber for this purpose would give the desired assistance to a greater part of them and would accomplish much toward encouraging them to build more substantial houses and maintain better homes.

*Industries.*—Stock raising, blanket weaving, and silversmithing are the principal industries of the Navaho Indians. It is a poor family that does not possess from 100 to 1,000 head of sheep and goats. A greater portion of the wool from the sheep is made into blankets by the Navaho women, for which they find a ready sale at all times. While the native Navaho sheep are of a hardy nature and are good rustlers for feed, the long inbreeding has caused their wool to become of inferior quality, becoming mixed with kemp and straight hair. Last fall authority was secured to purchase and issue 400 blooded bucks, which will no doubt greatly improve the quality of the wool produced and make the sheep more valuable for mutton.



The Navaho are a hard-working, industrious people, and never lose an opportunity to secure work. At different times, when I have sent out for 10 or 15 men to cut wood or work on the roads, from 50 to 100 would apply for employment.

Besides the three new buildings erected at the San Juan school during the past year, a substantial cottage and barn were erected near by for the use of one of the field matrons.

A telephone line has been completed between the school and Jewett, N. Mex., which connects us with all white settlements in San Juan County and also with the Western Union Telegraph system at Durango, Colo.

#### UNITED STATES SPECIAL ATTORNEY FOR THE PUEBLO INDIANS OF NEW MEXICO.

[A. J. ABBOTT, *Special Attorney.*]

The Pueblo Indians of the Territory of New Mexico are citizens of the United States and of the Territory, and each of their communities or pueblos is a corporation under the laws of New Mexico. These corporations have power to own, purchase, and sell property and to manage their own business affairs and their social and political governments, subject, however, always to the supremacy of Federal and Territorial laws.

Their lands, of which they have large tracts, are their own property, held by them in fee simple, and confirmed to them by patent from the Government of the United States.

These conditions render them in all respects amenable to the laws as are all other citizens, and subject to the operation of law upon and against their property.

For their protection and defense the Government of the United States has granted them a special attorney.

#### LITIGATION.

A statement of the litigation in which they have recently been and now are interested is as follows:

*At Taos.*—One suit against the pueblo by citizens to compel division of water for irrigation purposes. Settled favorably to Indians.

One suit to quiet title to certain lands claimed by pueblo; pending in district court.

*At San Juan.*—Three injunction suits in district court against the pueblo, arising out of irrigation difficulties. All terminating favorably to Indians.

*At Nambe.*—Four irrigation injunction suits against the pueblo. Three terminated favorably to Indians; one still pending in district court.

*At Laguna.*—One suit by the pueblo for the recovery of money, pending in district court of Santa Fe County.

One suit for forcible entry and detainer against pueblo and individual Indians. Pending in district court of Valencia County.

One preliminary examination against certain Navaho Indians for the murder of a Laguna Indian. Defendant bound over to await action of grand jury.

*At Cochiti.*—Two suits in justice court for the recovery of damages on account of trespass of animals on Indian lands. Decided in favor of Indians and appealed by defendants and now pending in the district court of Sandoval County.

*At Santa Clara.*—Proceeding under estray law by the pueblo. Successful.

*At Isleta.*—One suit against officers of the pueblo in habeas corpus to pro-



cure the release of an Indian imprisoned by order of the pueblo officers according to an ancient custom for violation of rules of pueblo government. Determined adversely to the officers.

One suit against officers of the pueblo for false imprisonment arising out of the matters stated in the last above item. Determined unfavorably to the pueblo.

There is a suit now pending in the supreme court of the Territory to determine whether or not the lands of the Pueblo Indians in New Mexico are taxable and the status of said suit is as follows: A decision has been handed down by the said court which determines that said lands are taxable. The special attorney has filed a motion for a rehearing, preparatory to an appeal to the Supreme Court of the United States, if such rehearing shall be disallowed. Said motion is now pending in the supreme court of the Territory.

It is safe to say that through the efforts of the special attorney more than double the number of actual suits commenced have been avoided and the matters in dispute have been settled without litigation, it being his policy to keep these people out of litigation as far as it can be done consistently, with a view to their financial interests and with a proper regard for their property rights and their dignity as citizens.

Besides the character of the work above set forth, the special attorney is called upon almost daily, as his quarterly reports to the Commissioner of Indian Affairs fully demonstrate, to advise and counsel the Indians concerning their duties toward the American and Mexican population residing in the vicinity of their pueblos and concerning the property laws of the United States and the Territory. Innumerable questions are to be settled and the most perplexing entanglements to be straightened out, requiring a very large correspondence to be carried on by the special attorney and the making of many visits to the several pueblos to prevent unnecessary, expensive, and disastrous litigation.

## PART III.—THE COURTS.

### SUPREME COURT.

[J. D. SENA, *Clerk.*]

The report of the clerk of the supreme court of the Territory of New Mexico for the fiscal year ending June 30, 1904, is as follows:

Cases under advisement.....	31
Cases returnable January term, 1904 .....	5
Cases filed during the fiscal year .....	38
<b>Total .....</b>	<b>74</b>

The cases above enumerated were brought into this court as follows:

	By appeal.	By writ of error.	Total.
First judicial district .....	13	1	14
Second judicial district .....	26	3	29
Third judicial district .....	4	1	5
Fourth judicial district .....	14	2	16
Fifth judicial district .....	7		7
Original in supreme court .....			3
<b>Total .....</b>	<b>64</b>	<b>7</b>	<b>74</b>

Of which said causes the following disposition is shown on the docket of this court, viz:

Finally determined by affirmance.....	14
Finally determined by dismissal.....	4
Reversed and remanded to the district courts.....	7
Continued to January term, 1905.....	1
Under advisement by the court.....	38
For hearing September 2, 1904.....	2
Rehearings granted.....	1
Returnable January term, 1905.....	5
Disbarred .....	1
Suspended from practice (for one year) .....	1
<b>Total .....</b>	<b>74</b>

Of the cases removed from this court to the Supreme Court of the United States the docket shows the following:

Cases pending at date of last report.....	2
Cases appealed during the year.....	1
<b>Total .....</b>	<b>3</b>

Disposed of as follows:

Reversed and remanded.....	1
Still pending in United States Supreme Court.....	2
<b>Total .....</b>	<b>3</b>

On the first day of the regular January term, being examination day for the admission of all applicants to the bar of this court, there were admitted 26 attorneys, of which number 21 were admitted on certificate of practice in other States and 6 upon passing the oral and written examination prescribed by the rules of this court.

Since the date of the last report an act has been passed in Congress creating the sixth judicial district of New Mexico, and under the said act the judges of the supreme court met and redistricted the Territory into six judicial districts, as follows:

The first judicial district is composed of the counties of Santa Fe, Rio Arriba, Taos, and San Juan, to which the Hon. John R. McFie, associate justice, was assigned, with headquarters at Santa Fe.

The second judicial district is composed of the counties of Bernalillo, McKinley, Sandoval, and Valencia, to which the Hon. Benjamin S. Baker, associate justice, was assigned, with headquarters at Albuquerque.

The third judicial district is composed of the counties of Socorro, Grant, Sierra, Dona Ana, and Luna, to which the Hon. Frank W. Parker, associate justice, was assigned, with headquarters at Las Cruces.

The fourth judicial district is composed of the counties of San Miguel, Mora, Colfax, and Union, to which the Hon. William J. Mills, chief justice, was assigned, with headquarters at Las Vegas.

The fifth judicial district is composed of the counties of Chaves, Eddy, and Roosevelt, to which the Hon. William H. Pope was assigned, with headquarters at Roswell.

The sixth judicial district is composed of the counties of Otero, Lincoln, Torrance, Leonard Wood, and Quay, to which the Hon. Edward A. Mann, associate justice, was assigned, with headquarters at Alamogordo.

#### THE COURT OF PRIVATE LAND CLAIMS.

[MATTHEW G. REYNOLDS, *United States Attorney.*]

The United States attorney for the Court of Private Land Claims submitted the following as his final report:

In concluding my official duties as United States attorney, I take great pleasure in thanking you and those with whom I have come in contact officially and personally, for the many personal and official kindnesses and courtesies extended to me, and to assure you that it shall be my pleasure to aid the people of the Territories of New Mexico and Arizona, and to commend the excellent administration of the affairs of this Territory during the last seven years by yourself and associates.

I have the honor to report that the Court of Private Land Claims, created under and by virtue of an act of Congress entitled "An act to establish a Court of Private Land Claims in certain States and Territories," approved March 3, 1891, and various acts amendatory and in extension thereof, has concluded and finally disposed of all the litigation and business that has been before it.

On the 15th instant the United States attorney advised the court that satisfaction of all degrees, judgments, and orders of the court had been entered of record as required by law, and announced that he had nothing further to suggest on behalf of the United States, and the court was adjourned without day.

The official existence of this tribunal was begun by its formal organization at Denver, Colo., on July 1, 1891, and ceases by operation of law to-day, after thirteen years of continuous labor in judicially determining and adjusting, under the provisions of the act of March 3, 1891, claims for lands within the limits of the territories derived by the United States from the Republic of Mexico and embraced within the Territories of New Mexico, Arizona, or Utah, or within the States of Colorado, Nevada, or Wyoming, by virtue of a Spanish or Mexican grant, concession, warrant, or survey, as the United States were bound to recognize and confirm by the treaties of cession of said country by Mexico to the United States, viz: The treaty of Guadalupe Hidalgo, concluded on February 2, 1848, and the Gadsden purchase (treaty of Mesilla), concluded December 30, 1853.

The court upon its organization on the 1st day of July, 1891, ordered that session be held at Denver, Colo., and Santa Fe, N. Mex. The court subsequently ordered the transfer of all records and files at Denver, Colo., to Santa Fe,



N. Mex., as the general official headquarters of the court, and abolished the Denver office. On the 6th day of December, 1892, court was established at Tucson, Ariz., for the adjudication of claims to lands situate within the Territory of Arizona, and all cases affecting lands in Arizona were transferred to that district.

During the existence of the Court of Private Land Claims the total area of land for which suits were brought and service had on the United States amounted to 35,491,020 acres of land. The claims confirmed by decrees of the court, which have been satisfied by the approval of the surveys made in execution of said decrees, amounts to 2,051,526 acres of land, and the amount rejected by the court is 33,439,493 acres of land.

You are advised that but one judgment was finally sustained against the United States under the provisions of section 13 of the act of March 3, 1891, for lands patented by the United States and situate within the boundaries of lands confirmed by the Court of Private Land Claims, to wit, for \$513.62 for 410.90 acres of land; which judgment I am advised by letter from the Auditor for the Interior Department, dated May 31, 1904, will be paid under appropriation made by Congress therefor upon application of the parties entitled thereto. This fact was made known to the Court of Private Land Claims and the letter of the Auditor was, by order of the court, spread upon the records and counsel for claimants notified by me.

It is with pleasure and pride I am able to state that on this date (June 30, 1904), all of the business heretofore pending before the Court of Private Land Claims has been concluded and approved, as required by the act of March 3, 1891.

Embraced in the schedules hereto attached and made a part of this report, numbered respectively A, B, C, D, and E, is an itemized statement of all the claims presented to the Court of Private Land Claims for adjudication.

From Schedule A it will be noted that there were filed in the New Mexico district, including the Peralta Reavis case (No. 110 in the New Mexico district—No 4 in the Arizona district) and three cases for lands claimed to be located within the State of Colorado, but which were transferred to and tried in the New Mexico district, 282 cases. Of this number 12 cases were for lands claimed to be situate in the Territory of Arizona, and were transferred to that district, leaving 270 cases involving the validity of 231 grants with an area of 34,653,340 acres, of which amount the court confirmed 1,934,986 acres and rejected 32,718,354 acres of land, which were tried and decided in the New Mexico district.

Schedule B contains a list of cases tried and decided in the New Mexico district, involving claims for money judgment against the United States, under the provisions of section 14 of the act of March 3, 1891, for lands patented by the United States within grants confirmed by the court.

Schedule C is a list of cases appealed to the Supreme Court of the United States from the New Mexico district, showing by whom appealed and the final disposition thereof.

From Schedule D it will be seen that there were filed in the Arizona district, including the 12 cases referred to in Schedule A as transferred from the New Mexico district, 20 cases; of these 1 case (No. 4, heirs of Miguel Peralta, deceased, *v.* The United States, for the confirmation of the Peralta grant, referred to in Schedule A), was transferred to the New Mexico district, leaving 19 cases, involving the confirmation of 17 grants, with a claimed area of 837,679.70 acres, of which number the court confirmed 116,639 acres and rejected 721,139 acres of land.

Schedule E is a list of cases appealed to the Supreme Court of the United States from the Arizona district, showing by whom appealed and the final disposition thereof.

Separate report was made in each case upon the conclusion of the trial and entry of the decree by the court. Annual reports were submitted each year of the business transacted. In many instances, in the decrees of confirmation, the exact area was not specified for lack of official survey, but the estimated area covered thereby was approximately stated in the reports from this office. In the schedules herewith submitted will be found the exact area covered by the decrees of confirmation and approval of surveys, and for which patent has been or will be issued as provided by law.

You are also advised that all records, files, and documents that have been in the possession of the United States attorney or assistants and employees from

time to time, obtained from other offices and departments, as well as private individuals, have been returned, and not one has been lost or mislaid.

The clerk of the court, Mr. Ireneo L. Chaves, advises me that all papers, files, and records in the possession of the court belonging to any other public office of the United States have been returned and not one has been lost or mislaid, and that all papers, files, and records in the possession of or appertaining to said court have been delivered to the surveyor-general of the Territory of New Mexico and receipts taken therefor. The delivery of these records to the surveyor-general of New Mexico was made under instructions from the Commissioner of the General Land Office, which instructions were given upon request of the judges of the Court of Private Land Claims, conveyed to the honorable Secretary of the Interior through a letter from this office dated the 15th instant. It would be a great misfortune if these papers, files, and records should be removed from the Territory where the land is situate.

The results disclosed by the schedules justifies me in calling attention to the position taken by this office upon the first investigations undertaken after the organization of the court, viz:

That, with the aid and assistance of a reliable expert familiar with the archives, the genuineness of grants could be easily determined; but as many of the muniments of title were very old, fragmentary, and incomplete, and the boundaries of the land granted designated by natural objects which could be applied to a number of different ones within the same locality, rendered additional means necessary for the determination of the amount of land granted in each particular instance of the utmost importance.

The danger lurking in unknown areas of land to be determined by identification of boundaries was impressed upon the Department, and after numerous requests and reports, made from time to time, the Attorney-General recommended and Congress appropriated sufficient money with which to enable this office to investigate each grant and protect the Government against extravagant claims. The amount of land claimed in each of the suits filed was very often excessive; and it appears from the claims made that fully one-half or more of the total area of New Mexico was covered and apparently clouded by these titles. The accurate amount of land which has been confirmed, and the surveys approved by the court within the Territory of New Mexico, is 1,934,986 acres—less than 6 per cent of the area claimed. In Arizona the area claimed was not so large, excepting the fraudulent claim of J. A. Peralta Reavis and wife for "La Baronia de Arizonaea" for 12,467,556 acres; but the areas were quite large and the contentions sufficiently acrimonious; but to demand of this office careful investigation and preparation. The areas were reduced from 837,679 acres claimed to 116,539 acres confirmed and surveys approved by the court.

Various contentions and feuds between settlers and claimants over the possession of these lands were encountered by me immediately upon taking charge of the litigation and lasted until final decrees were entered.

The peaceful conditions since and the prosperity of New Mexico and Arizona as this tribunal passes out are sufficiently important and gratifying to be noted.

In concluding this report of thirteen years' continuous service as United States attorney for the Court of Private Land Claims, it is but proper that mention should be made of those who have been associated with me on behalf of the Government, and upon whom I have relied and trusted at all times, and none of whom have I ever found unworthy or neglectful of the trust and confidence reposed in them.

Mr. Will M. Tipton was appointed special agent and expert by the Attorney-General, at my urgent solicitation, in 1892, and remained for nine years the confidential and trusted associate of the United States attorney. No one rendered more valuable assistance than he. His accurate knowledge of Spanish, expert study of handwriting, thorough familiarity with land titles in the Southwest, and his acquaintance with the details of public surveys combined to make him conspicuously qualified for the work to which he was called, and when to these qualities, indicative of the widest versatility, were added his thoroughness and untiring industry, it is not overestimating him to say that he was simply invaluable to the Government.

His remarkable ability was subjected to a test in the Peralta Reavis case, which it is believed few, if any, could have so successfully stood. As a result of his investigation of the archives in the Republic of Mexico under the direction of Mr. Severo Mallet-Prevost, of New York, special counsel employed by the



Attorney-General to assist in the preparation and trial of the case and with a view of determining the genuineness of the muniments of title, of which properly authenticated copies had been filed in this court to sustain the claim for La Baronia de Arizonaca, generally known as the "Peralta grant," the entire fabric was torn asunder piece by piece and the alteration and forgery of each record and instrument detected and exposed.

So complete and accurate was his examination that the appointment of Don Miguel Silva de Peralta, etc., as business agent and royal inspector was discovered to have been originally the royal commission of Count Fuentelara as viceroy of New Spain. Mr. Tipton deciphered and verified the accuracy of his examination by resort to photography, by means of which the names and words erased were rendered legible. Many other quite as skillful alterations and forgeries were exposed. The transcript of Mr. Tipton's testimony given upon the trial is preserved in the record, as well as the exhibits and photographs taken by him. Over 100 instruments and records were found to have been manufactured either in whole or in part.

The high compliment paid him by the Supreme Court of the United States in the case of the United States *v.* Ortiz (176 U. S., 436), a forgery case appealed from the Court of Private Land Claims, and in which he was the chief expert for the Government, wherein his testimony is referred to as being "so clear and so intelligent as to carry great weight with it," might with equal justice be made to refer to every other branch of the work in which he was engaged.

My personal and official relations with him were so close and intimate for nine years that I can truthfully say I would trust him with anything without the least concern as to the result. While the foregoing might seem to strangers and those not familiar with his relation to this office and myself extraordinary and fulsome praise, yet gratitude compels that I leave among the records of this office and the Department of Justice my appreciation of him. No man in America was better qualified for the difficult and technical work, and no man will ever bring to any labors more energy and integrity and conclude them with greater credit, success, and unimpeachable loyalty and integrity.

In 1901, the primary trial of causes having been practically completed, Mr. Tipton resigned to go to Manila as the chief of the bureau of public lands of the Philippines. His work there, under the Philippine Commission, in shaping a public land system for the archipelago, and in aiding to bring order out of chaos there existent in land titles, will be, I am satisfied, of the same high order as here.

\* \* \* \* \*



No.	Claimants.	Name of grant.	Location.	Area claimed.	Area confirmed and approved.	Area rejected.
1	Juan Chaves et al.	Town of Cubero.	Valencia County.	Acres. 47,743.000	Acres. 16,490.940	Acres. 31,252.060
2	J. M. C. Chaves et al.	Piata Colorado.	Rio Arriba County.	19,200.000	7,577.920	11,622.080
3	Transferred to Arizona district.					
4	Francisco A. Montoya.	San Antonio del Rio Colorado.	Taos County.	18,955.000		18,955.000
5	Julian Martinez et al.	Arroyo Honda.	do	237,000.000	20,629.380	2,370.620
6	Louise J. Purdy et al.	Sebastian de Vargas.	Santa Fe County.	42,000.000	13,434.380	28,565.620
7	Charles W. Lewis.	Bernabe M. Montano.	Bernalillo County.	151,000.000	44,070.660	106,929.340
8	City of Albuquerque.	Villa de Albuquerque.	do	15,381.000		15,381.000
9	Francisco Martinez et al.	Lucero de Godol or Antonio Martinez.	Taos County.	61,605.480	61,605.480	
10	Tomas Torres et al.	Rancho del Rio Grande.	do	104,045.000	91,813.150	17,229.850
11	Alejandro Sandoval et al.	Alameda.	Bernalillo County.	106,274.000	89,346.000	16,928.000
12	Katie McIrvine.	Jose Duran.	Santa Fe County.	425.850		425.850
13	City of Socorro et al.	Town of Socorro.	Socorro County.	17,371.180	17,371.180	
14	Salvador Romero et al.	Francisco Montes Vigil.	Rio Arriba County.	35,000.000	8,253.740	26,746.260
15	Louis Huning.	Antonio Sedillo or Canada de los Apaches.	Bernalillo and Valencia counties.	152,879.000	86,249.090	66,629.910
16	Feliz Romero.	Gijosa.	Taos County.	20,000.000	16,240.640	3,759.360
17	Pueblo of Santa Clara.	Canada de Santa Clara.	Rio Arriba County.	90,000.000	490.620	89,509.380
18	Matias Dominguez.	Pacheco.	Santa Fe County.	581.290	581.290	
19	See case No. 80.					
20	J. Franco Chaves.	Nerio Antonio Montoya.	Valencia County.	3,546.000		3,546.000
21	Juan de Dios Romero.	Cristobal de la Serna.	Taos County.	30,000.000	22,252.570	7,767.430
22	Lehman Spiegelberg et al.	San Marcos Pueblo.	Santa Fe County.	1,895.440	1,895.440	
23	Clinton N. Cotton.	Santa Teresa de Jesus.	Bernalillo County.	3,633.000		3,633.000
24	Numa Raymond.	Donna Ana Bend Colony.	Dona Ana County.	35,399.017	35,399.017	
25	Julian Sandoval et al.	Rancho del Vado.	San Miguel County.	315,300.000	5,024.300	310,275.700
26	Leandro Sandoval et al.	Rancho de Galban.	Bernalillo County.	30,000.000		30,000.000
27	Manuel Crespin et al.	San Antonio.	do	32,000.000		32,000.000
28	Pedro Jose Gallegos.	Nuestra Señora del Rosario San Fernando.	Rio Arriba County.	20,000.000	14,786.580	5,213.420
29	Transferred to Arizona district.					
30	Aniceto Martinez et al.	Casas de Biaño or Piedra Lumbre.	do	49,747.890	49,747.890	
31	Isaacs Armijo y Jaramillo et al.	Luis Jaramillo or Agua Salada.	Bernalillo County.	18,000.000	10,493.980	7,506.020
32	J. M. C. Chaves et al.	Piata Blanca.	Rio Arriba County.	16,000.000	8,955.110	7,044.890
33	City of Isleta.	Pueblo of San Antonio de Isleta.	Dona Ana County.	63,628.000		63,628.000
34	Walter P. Miller.	Ignacio Chaves.	Bernalillo County.	243,656.000	47,258.710	196,397.290
35	Desiderio Gomez et al.	Jacona.	Santa Fe County.	46,241.000	6,952.844	39,288.156
36	Cassandra E. Baird et al.	Baird's ranch.	Bernalillo County.	33,695.000		33,695.000
37	Martin B. Hayes.	Antonio Chaves.	Socorro County.	130,158.000		130,158.000
38	Carlos Lewis.	Canada de los Alamos.	Bernalillo and Valencia counties.	148,862.000	4,106.660	144,755.340
39	Felipe Delgado et al.	Caja del Rio.	Santa Fe and Bernalillo counties.	66,848.783	66,848.783	
40	Transferred to Arizona district.					

SCHEDULE A.—List of grants decided by the Court of Private Land Claims in the New Mexico district—Continued.

No	Claimants.	Name of grant.	Location.	Area claimed. Acres.	Area con- firmed and ap- proved. Acres.	Area rejected. Acres.
41	George N. Fletcher et al.	Rito de los Frijoles.	Bernalillo County.	23,000,000	.....	23,000,000
42	Transferred to Arizona district.					
43	Frank Perew et al.	Polvadera	Rio Arriba County	35,761,140	35,761,140	.....
44	James Corrigan.	Las Animas.	State of Colorado	4,096,346,000	.....	4,096,346,000
45	Town of Arisco	Town of Arisco	Bernalillo County.	82,728,720	82,728,720	.....
46	Hells of William Pinkerton.	Gervacio Nolan	Mora County	575,968,000	.....	575,968,000
47	Transferred to Arizona district.					
48	Benjamin Rodges et al.	Corpus Christi	State of Colorado	698,990,000	.....	698,990,000
49	Marvos Valdez et al.	Domingo Valdez	Santa Fe County	500,000	.....	500,000
50	Pueblo of Zia et al.	Ojo del Espiritu Santa.	Bernalillo County.	276,000,000	.....	276,000,000
51	Donaciano Gurule et al.	Elena Gallegos or Ranchos de Albuquerque	do	70,000,000	.....	70,000,000
52	Reyes Gonzales et al.	Abiquiu	Rio Arriba County	16,708,160	16,708,160	.....
53	Francisco A. Manzanares	Cañada de los Alamos	Santa Fe County	13,706,000	12,068,360	34,915,220
54	Luciano Chaves et al.	Galisteo	do	22,000,000	260,730	.....
55	Felipe Peralta et al.	Cevilleta	Socorro County	261,187,900	261,187,900	.....
56	Roman Martinez et al.	Medina or Black Mesa	Rio Arriba County	25,000,000	19,171,350	1,637,610
57	J. Chaves y Gallegos et al.	Nicolas Duran de Chaves	Valencia County	500,000,000	46,244,940	5,828,650
58	Eloisa L. Bergere et al.	Bartolome Baca	do	500,000,000	.....	3,755,060
59	J. B. Cessna et al.	Juan Jid or John Heath	Dona Ana County.	108,000,000	.....	500,000,000
60	Levi P. Morton. (See No. 25.)					108,000,000
61	Roman A. Baca et al.	Bartolomé Fernandez.	Bernalillo and Valencia counties.	25,424,280	25,424,280	.....
62	Maria Cleofes Boné et al.	Boné.	Mora County	6,000,000	.....	6,000,000
63	Frank Huning	Diego de Padillo or El Tajo	Bernalillo and Valencia counties.	24,800,000	.....	24,800,000
64	J. Franco Chaves.	San Clemente	Valencia County	95,000,000	37,069,290	57,900,710
65	Juan Fernandez et al.	Rio del Pueblo	Taos County	20,000,000	.....	20,000,000
66	Clinton N. Cotton	M. and S. Montoya or Bosque Grande	Bernalillo County.	3,253,000	.....	3,253,000
67	Roman A. Baca.	Felipe Tafoya	do	22,000,000	4,340,230	17,659,770
68	Maria L. Lucero et al.	Antonio de Abeita or Baltazar Cisneros	Rio Arriba County	8,000,000	721,420	7,278,580
69	Maria M. Baca et al.	Lucero Spring	Valencia County	70,000,000	.....	70,000,000
70	Mariano S. Otero.	Nuestra Señora de la Luz de Las Lagunitas.	Bernalillo County.	43,653,000	39,184,446	4,468,554
71	Transferred to Arizona district.					
72	Rosario Corkins et al.	Arroyo de los Chamilos	Santa Fe County	1,500,000	.....	1,500,000
73	Tomas C. Gutierrez et al.	Pajarito Tract	Bernalillo County	45,000,000	28,724,220	16,275,780
74	Pablo Crespin et al.	Cañon de Carnue.	do	2,000,590	.....	87,369,410
75	Roman A. Baca.	San Mateo Spring	do	4,340,276	4,340,276	.....
76	J. W. Akers et al. (See No. 38.)	Montaño.	do	151,066,000	.....	151,066,000
77	Justo E. Armijo.	Los Cerrillos	Santa Fe County	2,284,000	1,478,810	806,190
78	Beatriz P. de Armijo	Sitio de los Cerrillos	do	572,400	.....	.....
79	do.	The city of Santa Fe.	do	17,361,000	572,400	.....
80	City of Santa Fe	El Pino	do	2,000,000	.....	17,361,000
81	Juan Nieto et al.					2,000,000

82	Beatriz P. de Armijo	Siteo de Juana Lopez	do	1,085,550	1,368,000
83	Nasario Gonzales et al	Gotera	do		1,800,000
84	Lehman Spiegelberg	Cieneguilla	Taos County		43,961,000
85	Abraham Gold et al	Salvador Gonzales	Santa Fe County	200,820	25,000,000
86	Thomas B. Carron	Juan de Galdon	do	10,690,050	11,619,000
87	Luis M. Ortiz et al	Sierra Mosca	do		33,250,000
88	Jesus Maria Olguin	Ojo Caliente	Rio Arriba County	2,244,980	40,000,000
89	Benigno Ortiz et al	La Majada	Santa Fe and Bernalillo counties.	54,404,100	54,404,100
90	Jose H. Gurule	San Antonio de las Huertas	do		120,000,000
91	Thomas B. Carron	Juan Salas or Alamitos	do	4,763,850	2,500,000
92	Mariano S. Otero	Jose Garcia	Bernalillo County	297,550	76,000,000
93	Lorenzo Lobato	Salvador Lobato	Taos County		2,500,000
94	Antonio Joseph. (See No. 88.)	Ojo del Borrego	Bernalillo County	16,079,800	75,000,000
95	Jose Albino Baca et al.	Barranca	Taos County	30,638,280	30,638,280
96	Nepomuceno Martinez et al.	Barranca	Rio Arriba County		25,000,000
97	Anastacio C. de Baca et al.	Canada de San Francisco	Santa Fe County	1,382,100	1,382,100
98	Nasario Gonzales	La Petaca.	Rio Arriba		186,977,000
99	Antonio Serafin Pafia et al	Canon de San Diego.	Bernalillo County		9,752,000
100	Amado Chaves et al	Ojo del Apache.	San Miguel County		47,743,000
101	May Hays	Antonio Armijo.	Santa Fe County		900,000
102	J. A. Romero et al	Juan Cayetano Lobato.	do		1,000,000
103	Jose M. Lobato.	Archuleta and Gonzales	do		1,000,000
104	Juan de Archuleta.	Antonio Dominguez	do		1,800,000
105	Albino Dominguez et al.	Cañon de Chama	Rio Arriba County	1,422,020	472,737,000
106	T. C. Gutierrez. (See case No. 51.)	Juan Carlos Santistevan.	Taos County		17,159,000
107	The Rio Arriba Land and Cattle Co.	Conejos	State of Colorado		2,500,000,000
108	Clarence P. Elder et al	Peralta	Arizona and New Mexico.		12,467,456,000
109	Crescencio Valdez.	Town of Real de Dolores.	Santa Fe County	604,270	17,361,000
110	James A. Peralta-Reavis	Cuyamungue	do		4,365,730
111	Guadalupe Montoya.	Chupadero de la Lagunita.	San Miguel County		4,340,000
112	M. de la P. de Conway	San Jose del Encinal	Valencia County		30,000,000
113	Ponciano Lucero et al.	Arroyo Seco	Santa Fe County		6,000,000
114	Margarita Baca et al.	Talaya Hill	do	319,200	1,063,000
115	Manuel Archuleta et al.	Lucero	do		700,000
116	Jacob Gold et al	Bernal Spring	San Miguel County		20,000,000
117	Jacob Gold et al	Catarino Maese	Santa Fe County		300,000
118	Vicente Valdez et al.	Juan Rodriguez	do		2,000,000
119	Jose Anto. Rodriguez et al	De Vera	do		300,000
120	J. A. Romero et al	Poñasco Largo or Santiago Ramirez	do	272,168	5,822,532
121	Higinio Lujan et al	Rio Tesuque or Juan Benabites.	do		7,300,000
122	Manuel Romero y Dominguez	Juan Jose Archuleta	do		1,500,000
123	Juan A. Romero et al	Juan Antonio Flores	do		1,500,000
124	Manuel Romero et al	Town of Socorro	Socorro County		843,259,000
125	Esquibula Flores et al.	Ojo de San Jose or San Jose y Santo Toribio de Jemez.	Bernalillo County	4,336,910	25,663,090
126	David Trujillo et al. (See case No. 61.)	Guadalupe	Colfax and Mora counties.		47,743,000
127	Eutimio Montoya				
128	Thomas J. Allen et al. (See case No. 44.)				
129	Transferred to Arizona district.				
130	Florencio Sandoval et al				
131	Maria A. Gallegos et al				



SCHEDULE A.—List of grants decided by the Court of Private Land Claims in the New Mexico district—Continued.

No.	Claimants.	Name of grant.	Location.	Area claimed.	Area confirmed and approved.	Area rejected.
				<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>
132	Transferred to Arizona district.					
133	Pueblo of Laguna	Pueblo of Laguna	Valencia County	101,510.000	17,328.910	84,181.090
134	Pueblo of Santo Domingo et al. (See case No. 44.)	Santo Domingo and San Felipe	Bernalillo County	40,000.000	1,070.688	38,929.312
135	George W. Thompson et al.					
136	Anastacia P. de Castillo	El Rito	Bernalillo and Valencia counties.	511,000.000		511,000.000
137	Rafaela C. Barela et al.	Santo Tomas de Yturbide	Dona Ana County	10,000.000	9,622.340	377.660
138	Corporation of Jose Manuel Sanches Baca.	Jose Manuel Sanches Baca	do	3,601.000	3,530.640	70.400
139	Joseph F. Crosby	Miranda	do	4,751.000		4,751.000
140	J. I. Martinez et al.	Juan Jose Lobato	Rio Arriba County	205,615.720	205,615.720	
141	do	Vallecito de San Antonio	do	38,000.000		38,000.000
142	Mercildo Martinez et al.	Vallecito de Lobato	do	114,000.000		114,000.000
143	Lewis Lutz et al.	Jose Sutton	San Miguel County	69,445.000		69,445.000
144	Ramon Garcia et al.	San Pablo y Nacimiento	Bernalillo County	131,000.000		131,000.000
145	Pedro Perea	Arguito	do	2,000.000		2,000.000
146	do	Luis Garcia	do	11,674.000		11,674.000
147	Mariano S. Otero	Nuestra Señora de los Dolores Mine	Santa Fe County	42.000		42.000
148	Benito Berrogo et al. (See case No. 122.)	Fernando de Taos	Taos County	1,889.000	1,817.240	71.760
149	Juan Santistevan et al.	The Colony of Refugio	Dona Ana County	26,000.000	11,524.300	14,475.700
150	The Grant of the Colony of Refugio et al.					
151	The Corporation of Mesilla	The Mesilla Colony	do	21,628.520	21,628.520	
152	Joel Parker Whitney et al.	Estancia	Valencia County	415,686.000		415,686.000
153	L. Z. and M. Z. Farwell. (See case No. 39.)					
154	Las Animas Land Grant Company. (See case No. 4.)					
155	Pinto Pino et al.	Hacienda del Alamo	Santa Fe County	50,000.000		50,000.000
156	Florencio Sandoval et al.	Las Lamitas	Bernalillo County	120,000.000		120,000.000
157	Pueblo of Santa Ana et al.	Pueblo of Santa Ana or El Rancho	do	87,360.000	4,945.240	82,414.760
158	Felicita Crespin	San Acacio	Socorro County	18,000.000		18,000.000
159	Antonio Baca et al.	Mesta Blanca	Santa Fe County	18,000.000		18,000.000
160	Roman Baca et al.	Ancon Colorado	Bernalillo County	800.000		800.000
161	Juan M. Armijo et al.	La Peralta	do	400,000.000		400,000.000
162	Transferred to Arizona district					
163	Julian Martinez et al.	Cañada de las Mestenas	Taos County	16,000.000		16,000.000
164	Nicolas Pino	Ojito de Galisteo	Valencia County	25,000.000		25,000.000
165	Eduardo Otero et al.	Guadalupe Mine	Valencia County	16,000.000		16,000.000
166	Clarence P. Elder	Cañon del Rio Colorado	Taos County	43,939.000		43,939.000
167	Mariano S. Otero	Ojo de la Cebra	Bernalillo County	4,340.000		4,340.000
168	M. R. Pendell et al.	Santa Teresa	Dona Ana County	9,861.000	8,478.510	1,382.490
169	Smith H. Simpson et al.	Oreja del Llano de los Aguages	Taos County	150,000.000		150,000.000

170	Alex. Grezlachowski et al.	Sanguineula	San Miguel County	20,000.000	20,000.000
171	Abrian de Herrera et al.	Pueblo Quemado	Santa Fe County	900.000	900.000
172	Pueblo de Cochiti	Juana Baca	Bernalillo County	20,000.000	20,000.000
173	Antonio Griego et al.	El Embudo	Rio Arriba County	25,000.000	25,000.000
174	Juan N. Martinez.	Jose Ignacio Martinez	Taos County	500.000	500.000
175	Juan Anto. Valdez.	Felipe Medina	do.	300.000	300.000
176	Manuel Espinoza	Mannel Fernandez	do.	300.000	300.000
177	Jose Luis Valdez.	Rio del Oso	Rio Arriba County	5,000.000	5,000.000
178	Felipe Delgado et al.	Lo de Basquez	Santa Fe County	76,000.000	76,000.000
179	Jose L. Valdez et al.	Juan Bautista Valdez.	Rio Arriba County	60,000.000	58,531.430
180	Magdalena L. de Ortiz et al.	Roque Lobato	Santa Fe County	1,620.000	1,620.000
181	Tomas C. de Baca et al.	Santa Cruz	Bernalillo County	60,000.000	60,000.000
182	Jose Albino Baca. (See case No. 130.)				
183	Hate Sullivan. (See case No. 91.)				
184	Pueblo de Santo Domingo. (See case No. 134.)				
185	Pueblo of San Felipe. (See case No. 134.)				
186	William Frazer.	Miguel Chaves	Taos County	15,000.000	15,000.000
187	Refugio Aguilar	Felipe Tafoa	Santa Fe County	500.000	500.000
188	Francisco Lujan et al.	Mannel Tonorio	do.	600.000	600.000
189	Juan de Dios Tapia et al.	Tomas Tapia	do.	500.000	500.000
190	Jose A. Rivera.	Diego Arias de Quiros	do.	2,000.000	2,000.000
191	Refugio Aguilar et al.	Alfonzo Rael de Aguilar	do.	500.000	500.000
192	Luis Ribera et al.	Felipe Pacheco	do.	500.000	500.000
193	Jeans Ochoa et al. (See case No. 150.)				
194	Frank Becker et al.	Santa Cruz	do.	48,000.000	43,432.400
195	Arnado C. de Baca et al. (See case No. 95.)				
196	Amprosio Pino et al. (See case No. 136.)				
197	Antonio J. Ortiz et al.	El Badito	do.	1,350.000	1,350.000
198	Juan Marquez et al. (See case No. 25.)				
199	Jose M. Nieto et al.	Santa Fe Cañon	do.	6,000.000	6,000.000
200	Luis Chaves et al.	The Alamo	do.	2,000.000	2,000.000
201	Transferred to Arizona district.				
202	William T. Russell. (See case No. 86.)				
203	R. H. Longwill et al. (See case No. 144.)				
204	S. Endicott Peabody. (See case No. 142.)				
205	Joel P. Whitney et al.	Cañada de Cochiti	Bernalillo County	104,554.000	85,441.220
206	Eloisa Bergere et al. (See case No. 165.)				
207	Mariano S. Otero et al. (See case No. 38.)	Town of Bernalillo.	do.	47,743.000	47,743.000
208	Mannel Gurule et al.				
209	John Gwyn, jr. (See case No. 69.)				
210	Ambrocio Pino. (See case No. 136.)	Santo Domingo de Cundiyo.	Santa Fe County	2,137.080	2,137.080
211	Jose A. Vigil et al.	Pueblo de Quemado.	Rio Arriba	288,000.000	288,000.000
212	Jose de G. Trujillo et al.				
213	Smith H. Simpson. (See case No. 144.)	Cieneguilla	Santa Fe County	45,245.000	3,202.790
214	Feliciano Montoya et al.				

SCHEDULE A.—List of grants decided by the Court of Private Land Claims in the New Mexico district—Continued.

No.	Claimants.	Name of grant.	Location.	Area claimed. <i>Acres.</i>	Area con- firmed and ap- proved. <i>Acres.</i>	Area rejected. <i>Acres.</i>
215	John B. Salpointe.	Bishop's ranch	Santa Fe County	600,000	.....	600,000
216	Louise J. Purdy et al. (See case No. 44.)	Town of Bernalillo	Bernalillo County	11,674.370	3,404.670	8,269.700
217	Jose M. Chaves et al.					
218	Maria M. de Berry et al. (See case No. 107.)					
219	Marques A. Chaves et al.	Rancho de los Comanches	Not given	95,380,000	.....	95,380,000
220	Clotilda de Spencer et al.	Rancho Rio Puerto	Bernalillo County	95,480,000	.....	95,480,000
221	Luciano Chaves et al.	Rancho Los Comales or Corrales	Not given	95,380,000	.....	95,380,000
222	Clotilda Spencer et al.	Rancho de la Gallina	do	95,480,000	.....	95,480,000
223	N. M. de Aragon	Rancho	do	95,480,000	.....	95,480,000
224	Tomasa T. de Quintana	Rancho El Rito	do	95,480,000	.....	95,480,000
225	Isabel J. de Romero et al.	Rancho	do	95,480,000	.....	95,480,000
226	Arapito Ortega et al.	do	do	95,480,000	.....	95,480,000
227	Juan A. Quintana	Jose Ignacio Alari	Rio Arriba County	1,000,000	.....	1,000,000
228	Jose P. Jaramillo et al.	Roque Jacinto Jaramillo	do	10,000,000	.....	10,000,000
229	Jesus M. Castillo et al.	Angostura	Bernalillo County	2,300,000	1,579.480	720,520
230	Matias Contreras.	Francisco Garcia	Secorco County	4,000,000	.....	4,000,000
231	Eugenio Alvarez et al.	Manuel Alvarez	Mora and Colfax counties.	69,440,000	.....	69,440,000
232	Jesus Crespin et al.	Cristoval Crespin	Rio Arriba and Santa Fe counties.	3,000,000	.....	3,000,000
233	Jose A. Garcia. (See case No. 99.)					
234	Vicente Romero et al.	Alfonzo Rael de Agrular	Santa Fe County	17,361,000	.....	17,361,000
235	Bernardo Salazar	Antonio de Salazar	Rio Arriba County	23,351,000	.....	23,351,000
236	Jose S. y Ortiz et al. (See case No. 142.)					
237	Atanacio Romero et al.	Juan de Mestas	Santa Fe County	3,000,000	.....	3,000,000
238	Albino Lopez	La Nasa	Rio Arriba County	2,000,000	.....	2,000,000
239	Agapito Sena	Tacubaya	Santa Fe County	3,000,000	.....	3,000,000
240	Manuel Hurtado et al. (See case No. 205.)					
241	Antonio J. Gomez et al.	Hurraza or Paraje del Rancho	Taos County	90,000,000	.....	90,000,000
242	Apolonio Vigil	Las Manuelitas	San Miguel and Mora counties.	200,000,000	.....	200,000,000
243	Zenon Sandoval et al. (See case No. 214.)					
244	N. M. de Aragon et al.	La Gallina	Not given	434,000,000	.....	434,000,000
245	do.	Rancho del Rio Arriba	do	434,000,000	.....	434,000,000
246	do.	Rancho Los Rincones	do	434,000,000	.....	434,000,000
247	do.	Rancho Abiquiu	do	434,000,000	.....	434,000,000
248	do.	El Coyote	do	434,000,000	.....	434,000,000
249	Juan Garcia	Manuel Garcia de las Ribas	Rio Arriba County	7,577,000	.....	7,577,000
250	Juan Torres et al.	Cristobal de Torres	do	295,615,000	.....	295,615,000
251	Antonio Vigil	Diego de Belasco	do	5,000,000	.....	5,000,000
252	Feliciano Montoya.					
253	Juan Ramon Duran	Juan de Ulibarri	do	500,000	.....	500,000
254	Andres Garcia et al.	Juan E. Garcia de Noriega	Santa Fe County	5,000,000	.....	5,000,000



255	Jose Torres et al.	Jose Antonio Torres	Rio Arriba County	5,000.000	-----	5,000.000
256	Refugio Valverde et al.	Santo Toribio de Jemez	Bernalillo County	100,000.000	-----	100,000.000
257	Bartolome Trujillo et al.	San Jose de Garcia	Rio Arriba County	2,000.000	-----	2,000.000
258	Pedro Perea. (See case No. 217.)					
259	Pedro Perea	San Jose Spring	Bernalillo County	182,130.000	-----	182,130.000
260	Crescencio Moreno et al.	Juan Jose Moreno	do	35,000.000	-----	35,000.000
261	Antonio de Uribarri	Pueblo Colorado	Taos and Rio Arriba counties.	1,000.000	-----	1,000.000
262	Francisco A. Romero	Francisco Xavier Romero	Rio Arriba County	300.000	-----	300.000
263	Francisco Serna et al. (See case No. 257.)					
264	Bartolome Sanchez et al.	Bartolome Sanchez	do	10,000.000	4,469.828	5,530.172
265	Juan A. Martin et al. (See case No. 97.)		do	86,000.000	-----	86,000.000
266	Francisco Tafoya	Juan Tafoya grant	Bernalillo County	5,000.000	1,945.496	3,054.504
267	Valentin C. de Baca et al.	Santa Rosa de Cuervo	Santa Fe County	6,900.000	-----	6,900.000
268	Mannel Archuleta et al.	Mesilla tract.				
269	Antonio Jose Gallegos et al. (See case No. 90.)					
270	Mariano S. Otero et al.	Virtientes de Navajo	Bernalillo County	11,480.000	-----	11,480.000
271	Transferred to Arizona district.					
272	Guadalupe Montoya et al.	Bosque Grande or M & S. Montoya	do	4,340.000	2,967.574	1,372.426
273	Pueblo de Isleta.	Lo de Padilla	Valencia County	51,940.820	51,940.820	-----
274	J. Franco Chaves	Antonio Gutierrez	do	22,636.920	22,636.920	-----
275	do	Josquin Sedillo	Santa Fe County	1,042.000	-----	1,042.000
276	Peregrina Campbell et al.	Maragua				
277	Transferred to Arizona district.					
278	Mariano F. Sena	Jose de Leyba	do	18,000.000	-----	18,000.000
279	J. Maria Mestas	Josquin de Mestas	Bernalillo County	3,632.000	-----	3,632.000
280	Blaiza Alvarez de Sanchez	Sanchez land grant	Dona Ana County	4,428.000	-----	4,428.000
281	Romulo E. Varela et al.	Barela land grant	do	4,428.000	-----	4,428.000
282	Mannel M. Martin et al.	Galban or Ignacio Sanchez Vergara	Bernalillo County	30,000.000	-----	30,000.000
Total				34,653,340.616	1,934,986.390	32,718,354.226

SCHEDULE B.—*List of cases decided in the New Mexico district for money judgment against the United States, under the provisions of section 14 of the land-court act, for lands patented by the United States within grants confirmed by the Court of Private Land Claims.*

No.	Claimants.	Name of grant.	Acreage.	Amount.
6	Louise J. Purdy et al .....	Sebastian de Vargas .....	701.01	\$786.26
57	Jose Chaves y Gallegos et al .....	Nicolas Duran de Chaves .....	410.90	513.62
140	Jose Isabel Martinez et al .....	Juan Jose Lobato .....	1,856.73	2,320.91

Case No. 140, Jose Isabel Martinez et al. *v.* United States, Juan Jose Lobato grant, was the first one to come before the court for trial, and a judgment entered in favor of petitioners for themselves and in trust for the heirs and legal representatives of the original grantee and against the United States.

Pursuant to recommendation from this office, an appeal was authorized on behalf of the Government and duly prosecuted, with the result that the Supreme Court of the United States reversed the judgment of the court below and remanded the case to the Court of Private Land Claims for further proceedings not inconsistent with the opinion of the Supreme Court, which held that upon the record of the cause there could be no recovery on behalf of claimants (184 U. S., 441). A decree was accordingly entered by the Court of Private Land Claims setting aside the money judgment previously entered against the United States, rejecting and disallowing the claim and dismissing the petition.

Case No. 6, Louise J. Purdy et al. *v.* United States, Sebastian de Vargas grant, was also tried before the Court of Private Land Claims, and the court, based upon the holding of the Supreme Court in the case of Jose Isabel Martinez et al. *v.* United States, above referred to, rejected and disallowed the claim and dismissed the petition.

In case No. 57, Jose Chaves y Gallegos et al. *v.* United States, Nicolas Duran de Chaves grant, judgment was entered by the Court of Private Land Claims in favor of the petitioners, for themselves and in trust for the heirs and legal representatives of the original grantee and against the United States of America, for the sum of \$513.62 for 410.90 acres at the minimum statutory value of \$1.25 per acre. No further proceeding or appeal was recommended in this case in view of the fact that a reservation was made in favor of the claimants as to said patented lands in the original decree confirming the grant.

This is the only instance in which a money judgment against the United States has been granted under the provisions of said section 14 of the act creating the Court of Private Land Claims in all the litigation arising out of private land claims.

*SCHEDULE C.—List of cases appealed to the Supreme Court of the United States from the New Mexico district.*

No.	Name of grant.	By whom appealed.	Remarks.
2	Town of Cubero.....	Government.....	Judgment affirmed. (159 U. S., 452.)
6	Sebastian de Vargas.....	Claimants.....	Appeal dismissed.
8	City of Albuquerque.....	Government.....	Judgment reversed and cause remanded. (171 U. S., 685.)
12	Jose Duran.....	Claimants.....	Appeal dismissed.
15	Cañada de los Apaches or Antonio Sedillo.....	do.....	Do.
20	Nerio Antonio Montoya.....	do.....	Judgment affirmed. (175 U. S., 552.)
24	Doña Ana Bend Colony.....	Government.....	Appeal dismissed.
25	San Miguel del Bado.....	do.....	Judgment reversed and cause remanded. (167 U. S., 278.)
26	Rancho de Galban.....	Claimants.....	Appeal dismissed.
27	San Antonio.....	do.....	Judgment affirmed. (168 U. S., 208.)
30	Piedra Lumbre.....	Government.....	Appeal dismissed.
31	Luis Jaramillo.....	do.....	Do.
35	Jacona.....	do.....	Do.
36	Baird's ranch.....	Claimants.....	Do.
37	Antonio Chaves.....	do.....	Judgment affirmed. (170 U. S., 637.)
41	Rito de los Frijoles.....	do.....	Appeal dismissed.
43	Polvadera.....	Government.....	Do.
44	Las Animas.....	Claimants.....	Judgment affirmed. (179 U. S., 201.)
45	Town of Atrisco.....	Government.....	Appeal dismissed.
46	Gervacio Nolan.....	Claimants.....	Do.
50	Zia, Santa Ana and Jemez.....	do.....	Judgment affirmed. (168 U. S., 198.)
51	Elena Gallegos.....	Government.....	Appeal dismissed.
58	Bartolome Baca.....	Claimants and United States.....	Judgment reversed. (168 U. S., 66.)
59	John Heath.....	Claimants.....	Judgment affirmed. (169 U. S., 165.)
63	El Tajo.....	do.....	Appeal dismissed.
67	Felipe Tafoya.....	do.....	Do.
70	Las Lagunitas.....	Government.....	Do.
75	San Mateo Spring.....	Claimants.....	Do.
80	Villa de Santa Fe.....	Government.....	Judgment reversed. (165 U. S., 675.)
87	Sierra Mosca.....	do.....	Judgment reversed. (176 U. S., 422.)
90	San Antonio de las Huertas.....	Claimants.....	Appeal dismissed.
91	Juan Salas or Alamitos.....	Government.....	Do.
95	Ojo del Borrego.....	do.....	Do.
99	La Petaca.....	do.....	Judgment reversed and cause remanded. (175 U. S., 500.)
100	Cañon de San Diego.....	Claimants.....	Judgment affirmed. (165 U. S., 177.)
101	Ojo del Apache.....	do.....	Judgment affirmed. (175 U. S., 248.)
107	Cañon de Chama.....	do.....	Judgment reversed and cause remanded. (167 U. S., 298.)
108	Juan Carlos Santistevan or Cebolla.....	Government.....	Judgment reversed. (177 U. S., 104.)
110	Peralta.....	Claimants.....	Appeal dismissed.
111	Real de Dolores del Ora.....	do.....	Judgment affirmed. (175 U. S., 71.)
112	Cuyamungue.....	Government.....	Judgment reversed and cause remanded. (175 U. S., 60.)
114	San Jose del Encinal.....	do.....	Judgment reversed. (184 U. S., 653.)
116	Talaya.....	Claimants.....	Appeal dismissed.
130	San Jose and Santo Toribio.....	do.....	Do.
134	Santo Domingo and San Felipe.....	do.....	Do.
142	Vallecito de Lobato.....	do.....	Judgment affirmed. (175 U. S., 546.)
147	Los Dolores Mine.....	do.....	Appeal dismissed.
152	Estancia.....	do.....	Judgment affirmed. (181 U. S., 104.)
163	Cañada de las Mesteñas.....	do.....	Appeal dismissed.
166	Cañon del Rio Colorado.....	do.....	Do.
167	Ojo de la Cabra.....	do.....	Do.
168	Santa Teresa.....	Government.....	Judgment affirmed. (185 U. S., 189.)
173	El Embudo.....	Claimants.....	Appeal dismissed.
205	Cañada de Cochiti.....	do.....	Judgment reversed and cause remanded. (167 U. S., 529.)
264	Bartolome Sanchez.....	Government.....	Appeal dismissed.
274	Gutierrez and Sedillo.....	do.....	Judgment affirmed. (175 U. S., 509.)
275			
278	Jose de Leyba.....	Claimants.....	Judgment affirmed. (189 U. S., 233, 504.)



SCHEDULE D.—List of cases decided by the Court of Private Land Claims in the Arizona district.

No.	Claimants.	Name of grant.	Location.	Area claimed.	Area confirmed and approved.	Area rejected.
1	John H. Slaughter.	San Bernardino.	Cochise County.	Acres. 13,746.00	Acres. 2,882.86	Acres. 11,863.14
2	Alfred A. Green.	San Rafael de la Zanja.	Santa Cruz County.	152,889.62	17,474.06	135,415.56
3	Juan Pedro Camon.	San Rafael del Valle.	Cochise County.	20,034.00	17,474.93	2,559.07
34	Robert Perrin.	Babocomari.	Cochise and Santa Cruz counties.	123,068.87	33,792.20	89,276.67
4	Heins of Miguel Peralta. (Transferred to New Mexico district.)					
5	Santiago Alinsa, administrator	Agua Prieta.	Cochise County.	68,530.05	17,203.214	68,530.05
6	Marsh & Driscoll.	San Ygnacio de la Canoa.	Pima County.	17,353.85	5,733.41	150,636
64	The Arivaca Land and Cattle Company	Buena Vista.	Santa Cruz County.	18,648.00		12,914.59
7	Wm. Faxon, trustee, et al.	Aribac.	Pima County.	20,400.00		20,400.00
8	D. G. Astiazaran et al. (See case No. 8.)	Calabazas and Tumacacori.	do.	81,350.00		81,350.00
9	The Reloj Cattle Co.	San Pedro.	Cochise County.	38,622.06		38,622.06
10	United States v. Santiago Alinsa.	Los Nogales de Elias.	Pima County.	32,763.00		32,763.00
28	do.	San Jose de Sonoita.	do.	12,147.69	5,123.42	7,024.27
42	Wm. R. Hearst et al.	Rancho de las Boquillas y Nogales.	Cochise County.	30,728.00	17,355.86	13,372.14
47	Earl B. Coe.	El Paso de los Algodones.	Pima County.	21,692.32		21,692.32
71	Francis E. Spencer et al.	Tres Alamos.	Cochise County.	43,384.64		43,384.64
132	Mannela V. de Marquez.	Reyes Pacheco.	Pima County.	600.00		600.00
162	G. Hill Howard. (See case No. 8.)					
201	Sopori Land and Mining Co.	Sopori.	do.	141,721.60		141,721.60
Total.				837,679.70	116,533.954	721,136.746

*SCHEDULE E.—List of cases appealed to the Supreme Court of the United States from the Arizona district.*

No.	Name of grant.	By whom appealed.	Remarks.
2	San Rafael de la Zanja.....	Claimants and United States.	Judgment affirmed. (185 U. S., 256.)
3	San Rafael del Valle .....	Claimants .....	Judgment reversed and cause remanded. (171 U. S., 277.)
		United States.....	Judgment affirmed. (184 U. S., 572.)
3½	Babocomari .....	Claimants .....	Judgment reversed and cause remanded. (171 U. S., 292.)
		Do.....	Appeal dismissed.
5	Agua Prieta .....	do.....	Judgment affirmed. (184 U. S., 693.)
6	San Ygnacio de la Canoa.....	United States .....	Judgment reversed and cause remanded. (171 U. S., 242.)
6½	Buena Vista .....	Claimants .....	Appeal dismissed.
7	Aribac .....	do.....	Judgment affirmed. (184 U. S., 649.)
8	Tumacacori, Calabazas, and Huebabi.	do.....	Judgment affirmed. (171 U. S., 244.)
10	San Pedro .....	do.....	Judgment affirmed. (184 U. S., 624.)
29	Los Nogales de Elias .....	do.....	Judgment affirmed. (161 U. S., 208.)
40	San Jose de Sonoita .....	do.....	Judgment reversed and cause remanded. (Ely's Admr. v. United States, 171 U. S., 220.)
47	El Paso de los Algodones.....	United States .....	Judgment reversed and cause remanded. (170 U. S., 681.)
		Claimants .....	Petition for rehearing denied. (174 U. S., 578.)
71	Tres Alamos.....	do.....	Appeal dismissed.
132	Reyes Pacheco .....	do.....	Do.
201	Sopori Land and Mining Co....	do.....	Do.

**UNITED STATES ATTORNEY, DISTRICT OF NEW MEXICO.**

[W. B. CHILDERS, Attorney.]

	Customs.	Internal-revenue.	Post-office.	Naturalization acts.	Intercourse laws.	Pension laws.	Embezzlement.	Miscellaneous.	Total.
<b>CIVIL CASES.</b>									
Cases pending July 1, 1903, to which the United States was a party.....	1							14	15
Cases commenced during the fiscal year ending June 30, 1904.....	1							2	3
Cases terminated during the fiscal year ending June 30, 1904.....	1							4	5
Judgments for United States.....								3	3
Dismissed or discontinued.....	1							1	2
Appealed to supreme court of Territory.....								1	1
Cases pending in the United States courts July 1, 1904.....	1							13	14
Aggregate amount of judgments obtained during the year in favor of the United States.....								\$660	\$660
Amount realized from judgments obtained in former years.....								\$120	\$120
Amount realized from suits settled by compromise and otherwise and not included in the foregoing.....								\$97.70	\$97.7
<b>CRIMINAL CASES.</b>									
Prosecutions pending July 1, 1903, to which the United States was a party.....	3	7	5				1	28	44
Prosecutions commenced during the fiscal year ending June 30, 1904.....	3	2	9			1		52	67
Prosecutions terminated during the fiscal year ending June 30, 1904.....		7	10					39	56
Convictions.....	1		4					10	15
Acquittals.....		2	1					7	10
Nol. pros., discontinued or quashed.....	1	5	5					20	31
Prosecutions pending July 1, 1904.....	4	2	4			1	1	43	55
Aggregate amount of fines, forfeitures, and penalties imposed during the year.....			\$500					\$53	\$553

## UNITED STATES MARSHAL, DISTRICT OF NEW MEXICO.

[CHARLES M. FORAKER, *Marshal*.]

The deputies are George A. Kaseman (chief), C. E. Foraker, William R. Forbes, John M. Wiley, and Cipriano Baca.

*Disbursements during the fiscal year 1904.*

Salaries, fees, and expenses of marshals-----	\$7, 589. 27
Fees of jurors-----	16, 785. 50
Fees of witnesses-----	8, 230. 05
Support of prisoners-----	2, 786. 85
Pay of bailiffs-----	1, 138. 53
Miscellaneous expenses-----	914. 20
Total -----	37, 444. 40

REPORTS OF DISTRICT COURTS, FOR THE FISCAL YEAR ENDING  
JUNE 30, 1904.

## FIRST JUDICIAL DISTRICT.

[A. M. Bergere, clerk.]

## UNITED STATES.

## CIVIL.

Causes pending July 1, 1903-----	2
Causes reinstituted -----	1
Causes pending June 30, 1904-----	3

## CRIMINAL.

Causes pending July 1, 1903-----	10
Causes instituted from July 1, 1903, to June 30, 1904-----	11
Causes disposed of by dismissal-----	9
Causes disposed of by trial and judgment-----	3
Causes pending June 30, 1904-----	9

## BANKRUPTCY.

Causes pending July 1, 1903-----	4
Causes pending June 30, 1904-----	4

## TERRITORIAL.

## SANTA FE COUNTY.

## CIVIL.

Causes pending July 1, 1903-----	162
Causes instituted from July 1, 1903, to June 30, 1904-----	107
Causes disposed of by dismissal-----	27
Causes disposed of by trial and judgment-----	95
Causes disposed of by change of venue-----	1
Causes pending June 30, 1904-----	146

## CRIMINAL.

Causes pending July 1, 1903-----	30
Causes instituted from July 1, 1903, to June 30, 1904-----	61
Causes disposed of by trial and plea-----	8
Causes disposed of by dismissal-----	35
Causes disposed by being dropped from the docket-----	15
Causes pending June 30, 1904-----	33



## RIO ARriba COUNTY.

## CIVIL.

Causes pending July 1, 1903-----	40
Causes instituted from July 1, 1903, to June 30, 1904-----	31
Causes disposed of by dismissal-----	14
Causes disposed of by trial and judgment-----	8
Causes disposed of by change of venue-----	2
Causes pending June 30, 1904-----	47

## CRIMINAL.

Causes pending July 1, 1903-----	28
Causes instituted from July 1, 1903, to June 30, 1904-----	40
Causes disposed of by dismissal-----	16
Causes disposed of by trial and plea-----	8
Causes disposed of by being dropped from the docket-----	2
Causes pending June 30, 1904-----	42

## TAOS COUNTY.

## CIVIL.

Causes pending July 1, 1903-----	50
Causes instituted from July 1, 1903, to June 30, 1904-----	64
Causes disposed of by dismissal-----	17
Causes disposed of by trial and judgment-----	23
Causes pending June 30, 1904-----	54

## CRIMINAL.

Causes pending July 1, 1903-----	11
Causes instituted from July 1, 1903, to June 30, 1904-----	29
Causes disposed of by dismissal-----	6
Causes disposed of by trial and plea-----	7
Causes disposed of by being dropped from the docket-----	9
Causes pending June 30, 1904-----	18

## SAN JUAN COUNTY.

## CIVIL.

Causes pending July 1, 1903-----	21
Causes instituted from July 1, 1903, to June 30, 1904-----	57
Causes disposed of by dismissal-----	14
Causes disposed of by trial and judgment-----	38
Causes pending June 30, 1904-----	26

## CRIMINAL.

Causes pending July 1, 1903-----	15
Causes instituted from July 1, 1903, to June 30, 1904-----	19
Causes disposed of by dismissal-----	12
Causes disposed of by trial and plea-----	8
Causes disposed of by being dropped from the docket-----	3
Causes pending June 30, 1904-----	11

## SUMMARY.

## CIVIL.

Causes pending July 1, 1903:	
United States-----	2
Bankruptcy-----	4
Santa Fe County-----	162
Rio Arriba County-----	40
Taos County-----	50
San Juan County-----	21
Total-----	279

## Causes instituted from July 1, 1903, to June 30, 1904:

United States	1
Santa Fe County	107
Rio Arriba County	31
Taos County	54
San Juan County	57
Total	250

## Causes disposed of by dismissal:

Santa Fe County	27
Rio Arriba County	14
Taos County	17
San Juan County	14
Total	72

## Causes disposed of by trial and judgment:

Santa Fe County	95
Rio Arriba County	8
Taos County	23
San Juan County	38
Total	164

## Causes disposed of by change of venue:

Santa Fe County	1
Rio Arriba County	2
Total	3

## Causes pending June 30, 1904:

Santa Fe County	146
Rio Arriba County	47
Taos County	64
San Juan County	26
United States	3
Bankruptcy	4
Total	290

## CRIMINAL.

## Causes pending July 1, 1903:

United States	10
Santa Fe County	30
Rio Arriba County	28
Taos County	11
San Juan County	15
Total	94

## Causes instituted from July 1, 1903, to June 30, 1904:

United States	11
Santa Fe County	61
Rio Arriba County	40
Taos County	29
San Juan County	19
Total	160

## Causes disposed of by dismissal:

United States	9
Santa Fe County	35
Rio Arriba County	16
Taos County	6
San Juan County	12
Total	78

## Causes disposed of by trial and plea :

United States.....	3
Santa Fe County.....	8
Rio Arriba County.....	8
Taos County.....	7
San Juan County.....	8
Total .....	34

## Causes disposed of by being dropped from the docket :

Santa Fe County.....	15
Rio Arriba County.....	2
Taos County.....	9
San Juan County.....	3
Total .....	29

## Causes pending June 30, 1904 :

United States.....	9
Santa Fe County.....	33
Rio Arriba County.....	42
Taos County.....	18
San Juan County.....	11
Total .....	113

## RECAPITULATION.

## CIVIL.

Causes of all kind pending July 1, 1903.....	279
Causes of all kind instituted from July 1, 1903, to June 30, 1904.....	250
Total .....	529
Causes of all kind disposed of.....	239
Causes of all kind pending June 30, 1904.....	290
Total .....	529

## CRIMINAL.

Causes pending July 1, 1903.....	94
Causes instituted from July 1, 1903, to June 30, 1904.....	160
Total .....	254
Causes disposed of.....	141
Causes pending June 30, 1904.....	113
Total .....	254

## SECOND JUDICIAL DISTRICT.

[W. E. Dame, clerk.]

Cases of all kinds on docket June 30, 1903.....	307
Cases of all kinds instituted during year.....	425
	732
Cases of all kinds disposed of during year.....	409
Balance of all cases on docket June 30, 1904.....	323



## DISTRICT COURT, BERNALILLO COUNTY.

Civil actions pending June 30, 1903	163
Civil actions filed during year	213
	<u>376</u>
Civil actions disposed of during year	249
	<u>127</u>
Civil actions pending June 30, 1904	127
Criminal cases pending June 30, 1903	47
Criminal cases instituted during year	93
	<u>140</u>
Criminal cases disposed of during year:	
Convictions	40
Acquittals	8
Dismissed	27
	<u>75</u>
Criminal cases pending June 30, 1904	65

## DISTRICT COURT, VALENCIA COUNTY.

Civil actions pending June 30, 1903	31
Civil actions filed during year	37
	<u>68</u>
Civil actions disposed of during year	22
	<u>46</u>
Civil actions pending June 30, 1904	46
Criminal cases pending June 30, 1903	30
Criminal cases instituted during year	33
	<u>63</u>
Criminal cases disposed of during year:	
Convictions	8
Acquittals	5
Dismissed	15
	<u>28</u>
Criminal cases pending June 30, 1904	35

## DISTRICT COURT, M'KINLEY COUNTY.

Civil actions pending June 30, 1903	30
Civil actions instituted during year	15
	<u>45</u>
Civil actions disposed of during year	13
	<u>32</u>
Civil actions pending June 30, 1904	32
Criminal cases pending June 30, 1903	6
Criminal cases instituted during year	7
	<u>13</u>
Criminal cases disposed of during year:	
Convictions	6
Dismissed	2
	<u>8</u>
Criminal cases pending June 30, 1904	5

## DISTRICT COURT, SANDOVAL COUNTY.

Civil actions instituted during year, June 30, 1904	26
Civil actions disposed of during year	14
	<u>12</u>
Civil actions pending June 30, 1904	12
Criminal cases instituted during year, June 30, 1904 (pending)	1

## UNITED STATES DISTRICT COURT.

Cases of all kinds pending June 30, 1903	21	
Cases of all kinds instituted during year	24	
		45
Cases of all kinds disposed of during year		13
		<u>32</u>
Cases of all kinds pending June 30, 1904		32
Civil actions pending June 30, 1903	11	
Civil actions instituted during year	8	
		19
Civil actions disposed of during year		3
		<u>16</u>
Civil actions pending June 30, 1904		16
Criminal cases pending June 30, 1903	10	
Criminal cases instituted during year	16	
		26
Criminal cases disposed of during year :		
Convictions	4	
Dismissed	6	
		10
Criminal cases pending June 30, 1904		16
Fees due the Territory collected and paid to Territorial treasurer for the period from June 30, 1903, to July 1, 1904	\$2,047.55	
Criminal bonds forfeited, collected, and paid to county treasurers, as per orders of court	700.00	
Fines paid into court, and paid to county treasurers	11.00	

## THIRD JUDICIAL DISTRICT.

[J. P. Mitchell, clerk.]

## UNITED STATES COURT.

Civil cases pending June 30, 1903	11	
Civil cases docketed from July 1, 1903, to June 30, 1904	5	
		<u>16</u>
Total		16
Disposed of by trial and judgment		10
		<u>6</u>
Balance pending June 30, 1904		6
Criminal cases pending June 30, 1903	15	
Criminal cases filed from July, 1903, to June 30, 1904	12	
Number bills filed from July, 1903, to June 30, 1904	2	
		<u>29</u>
Total		29
Disposed of :		
By trial and convictions	3	
By acquittals	5	
Dropped with leave to reinstate	1	
Number bills	2	
Nolles entered	5	
		16
Balance cases pending June 30, 1904		13

## TERRITORIAL.

## DONA ANA COUNTY.

## CIVIL.

Civil cases pending June 30, 1903	41
Civil cases filed from July 1, 1903, to June 30, 1904	84
Total	125
Disposed of by trial and court	47
Cases dismissed	20
	67
Balance civil cases pending June 30, 1904	58

## CRIMINAL.

Criminal cases pending June 30, 1903	35
Cases filed from July 1, 1903, to June 30, 1904	85
Number bills filed from July 1, 1903, to June 30, 1904	10
Total	130
Disposed of by pleas of guilty and convictions	17
By acquittals	6
Cases dropped with leave to reinstate	6
Change of venue	14
Number bills	10
Cases dismissed	47
	100
Balance pending June 30, 1904	30

## GRANT COUNTY.

## CIVIL.

Chancery cases pending June 30, 1903	8
Disposed of July 1, 1903, to June 30, 1904	4
Balance pending June 30, 1904	4
Civil cases pending July 1, 1903	62
Civil cases filed from July 1, 1903, to June 30, 1904	82
Total	144
Cases disposed of by trial from July 1, 1903, to June 30, 1904	64
Cases dismissed during same period	28
	92
Balance cases pending June 30, 1904	52

## CRIMINAL.

Criminal cases pending June 30, 1903	17
Cases filed from July 1, 1903, to June 30, 1904	181
"No bills" filed during same period	37
Total	235
Disposed of during above period by nolle entered	81
Cases dropped with leave to reinstate	3
Acquittals	10
Convictions and pleas of guilty	56
Change of venue	9
"No bills"	37
	196
Balance pending June 30, 1904	39



## SIERRA COUNTY.

## CIVIL.

Civil cases pending June 30, 1903	12
Cases docketed from July 1, 1903, to June 30, 1904	25
	37
Disposed of by trial during above period	19
By dismissal	4
	23
Balance pending June 30, 1904	14

## CRIMINAL.

Criminal cases pending June 30, 1903	34
Cases filed from July 1, 1903, to June 30, 1904	23
"No bills"	2
	59
Disposed of by convictions and pleas of guilty	2
Acquittals	4
Change of venue	5
Dropped with leave to reinstate	1
Dismissals	13
"No bills"	2
	27
Balance pending June 30, 1904	32

## LUNA COUNTY.

## CIVIL.

Civil cases pending June 30, 1903	26
Civil cases filed from July 1, 1903, to June 30, 1904	30
	56
Disposed of by trial	23
"No bills"	2
	31
Balance pending June 30, 1904	25

## CRIMINAL.

Criminal cases pending June 30, 1903	47
Cases filed from July 1, 1903, to June 30, 1904	95
"No bills"	2
	144
Disposed of by convictions and pleas of guilty	28
Acquittals	1
Dismissals	29
Dropped with leave to reinstate	1
"No bills"	2
	61
Balance cases pending June 30, 1904	83

## SOCORRO COUNTY.

## CHANCERY.

Chancery cases pending June 30, 1903	25
Chancery cases pending from June 30, 1903, to July 1, 1904	10
Chancery cases dismissed between June 30, 1903, and July 1, 1904	20
Final decrees entered during said period	8

## CIVIL.

Cases pending from July 1, 1903, to July 1, 1904	170
Cases dismissed during said period	63
Final decrees entered during said period	4
Final judgments entered during said period	41
Cases docketed between July 1, 1903, and July 1, 1904	60

## CRIMINAL.

Cases pending July 1, 1903	66
Cases pending from July 1, 1903, to July 1, 1904	53
Cases dismissed and dropped from docket during said period	32
Pleas of guilty during said period	15
Convictions during said period	11
Acquittals during said period	2
"No bills" entered during year ending July 1, 1904	29

Fees collected within the third judicial district of New Mexico and paid into the Territorial treasury during the twelve months ending June 30, 1904:

From Dona Ana County	\$575. 50
From Grant County	960. 40
From Sierra County	137. 85
From Otero County	567. 35
From Luna County	302. 25

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2, 543. 25

## FOURTH JUDICIAL DISTRICT.

[Secundino Romero, Clerk.]

## UNION COUNTY.

## CRIMINAL.

Pending June 30, 1903	23
New cases and indictments to June 30, 1904	54
Dismissed	10
Sentences	8
No true bills	6
Pending June 30, 1904	53
Total	77

## CIVIL.

Pending June 30, 1903	46
New cases to June 30, 1904	53
Stricken from docket	10
Dismissed	9
Judgments rendered	34
Pending June 30, 1904	46
Total	99

## MORA COUNTY.

## CRIMINAL.

Pending June 30, 1903	24
New cases and indictments for year ending June 30, 1904	29
Dismissed	12
Stricken from docket	5
Judgments and sentences	3
Venue changed	5
Pending June 30, 1904	28
Total	53

## CIVIL.

Pending June 30, 1903	73
New cases for year ending June 30, 1904	45
Dismissed	6
Stricken from docket	2
Judgments	27
Pending June 30, 1904	83
Total	118

## COLFAX COUNTY.

## CRIMINAL.

Pending June 30, 1903	57
New cases and indictments for year ending June 30, 1904	54
Dismissed	24
Stricken from docket	2
Judgments and sentences	23
Acquittals	4
No true bills	6
Pending June 30, 1904	52
Total	111

## CIVIL.

Pending June 30, 1903	85
New cases for year ending June 30, 1904	97
Dismissed	23
Stricken from docket	4
Judgments	53
Venue changed	3
Pending June 30, 1904	99
Total	182

## SAN MIGUEL COUNTY.

## CRIMINAL.

Pending June 30, 1903	57
New cases and indictments for the year ending June 30, 1904	111
Dismissed	70
Stricken from docket	7
Judgment and sentence	17
No true bill	1
Pending June 30, 1904	73
Total	168

## CIVIL.

Pending June 30, 1903	267
New cases for the year ending June 30, 1904	175
Dismissed	52
Stricken from docket	49
Judgments	128
Venue changed	3
Pending June 30, 1904	210
Total	442



## CRIMINAL CASES.

## Pending June 30, 1903:

Union County	23
Mora County	24
Colfax County	57
San Miguel County	57
Total	161

## New cases to June 30, 1904:

Union County	54
Mora County	29
Colfax County	54
San Miguel County	111
Total	248

## Judgments and sentences on convictions:

Union County	8
Mora County	3
Colfax County	23
San Miguel County	17
Total	51

## Dismissals:

Union County	10
Mora County	12
Colfax County	24
San Miguel County	70
Total	116

## Stricken from docket:

Union County	0
Mora County	5
Colfax County	2
San Miguel County	7
Total	14

## Acquittals:

Union County	0
Mora County	0
Colfax County	4
San Miguel County	0
Total	4

## Venue changed:

Mora County	5
-------------	---

## No true bills:

Union County	6
Colfax County	6
San Miguel County	1
Total	13

## Pending June 30, 1904:

Union County	53
Mora County	28
Colfax County	52
San Miguel County	73
Total	206

## CIVIL CASES.

## Pending June 30, 1903:

Union County	46
Mora County	73
Colfax County	85
San Miguel County	267

Total 471

## New cases to June 30, 1904:

Union County	53
Mora County	45
Colfax County	97
San Miguel County	175

Total 370

## Judgments:

Union County	34
Mora County	27
Colfax County	53
San Miguel County	128

Total 242

## Dismissals:

Union County	9
Mora County	6
Colfax County	23
San Miguel County	52

Total 90

## Stricken from docket:

Union County	10
Mora County	2
Colfax County	4
San Miguel County	49

Total 65

## Venue changed:

Union County	0
Mora County	0
Colfax County	3
San Miguel County	3

Total 6

## Pending June 30, 1904:

Union County	46
Mora County	83
Colfax County	99
San Miguel County	210

Total 438

## SUMMARY.

## CRIMINAL CASES.

Pending June 30, 1903	161
New cases and indictments to June 30, 1904	248
	409
Convictions, etc	51
Acquittals	4
Dismissals	116
Stricken from docket	14
Venue changed	5

No true bills.....	13
Pending June 30, 1904.....	206
	<hr/> 409
CIVIL CASES.	
Pending June 30, 1903.....	471
New cases to June 30, 1904.....	370
	<hr/> 841
Judgments.....	242
Dismissals.....	90
Stricken from docket.....	65
Venue changed.....	6
Pending June 30, 1904.....	438
	<hr/> 841

The records of Leonard Wood and Quay counties having been transferred to the sixth judicial district on July 1, 1904, I am unable to report for said two counties.

#### FIFTH JUDICIAL DISTRICT.

[W. E. Martin, Clerk.]

The following are the cases pending June 30, 1903, in the fifth judicial district of New Mexico, together with the number filed from said date to June 30, 1904, and the disposition of same during said period:

#### SOCORRO COUNTY.

CHANCERY.	
Pending June 30, 1903.....	25
Filed June 30, 1903, to June 30, 1904.....	10

	<hr/> 35
Disposed of June 30, 1903, to June 30, 1904.....	28
Still pending.....	<hr/> 7

CIVIL.	
Pending June 30, 1903.....	170
Filed June 30, 1903, to June 30, 1904.....	60

	<hr/> 230
Disposed of June 30, 1903, to June 30, 1904.....	108
Still pending.....	<hr/> 122

CRIMINAL.	
Pending June 30, 1903.....	66
Filed June 30, 1903, to June 30, 1904.....	53

	<hr/> 119
Disposed of June 30, 1903, to June 30, 1904.....	60
Still pending.....	<hr/> 59

Total number of cases:	
Chancery.....	35
Civil.....	230
Criminal.....	119
	<hr/> 384

Total number disposed of:	
Chancery.....	28
Civil.....	108
Criminal.....	60
	<hr/> 196

Still pending:	
Chancery.....	7
Civil.....	122
Criminal.....	59
	<hr/> 188



## LINCOLN COUNTY.

## CIVIL.

Pending June 30, 1903-----	73
Filed June 30, 1903, to June 30, 1904-----	88
	<hr/>
	161
Disposed of June 30, 1903, to June 30, 1904-----	30
	<hr/>
Still pending-----	131

## CRIMINAL.

Pending June 30, 1903-----	70
Filed June 30, 1903, to June 30, 1904-----	84
	<hr/>
	154
Disposed of June 30, 1903, to June 30, 1904-----	69
	<hr/>
Still pending-----	85

## Total number of cases:

Civil-----	161
Criminal-----	154
	<hr/>
	315

## Total number disposed of:

Civil-----	30
Criminal-----	69
	<hr/>
	99
Still pending-----	216

## CHAVES COUNTY.

## CIVIL.

Pending June 30, 1903-----	47
Filed June 30, 1903, to June 30, 1904-----	116
	<hr/>
	190
Disposed of June 30, 1903, to June 30, 1904-----	92
	<hr/>
Still pending-----	98

## CRIMINAL.

Pending June 30, 1903-----	47
Filed June 30, 1903, to June 30, 1904-----	119
	<hr/>
	166
Disposed of June 30, 1903, to June 30, 1904-----	68
	<hr/>
Still pending-----	98

## Total number of cases:

Civil-----	190
Criminal-----	166
	<hr/>
	356

## Total number disposed of:

Civil-----	92
Criminal-----	68
	<hr/>
	160
Still pending-----	196

## EDDY COUNTY.

CIVIL.	
Pending June 30, 1903	40
Filed June 30, 1903, to June 30, 1904	45
	85
Disposed of June 30, 1903, to June 30, 1904	60
Still pending	25
CRIMINAL.	
Pending June 30, 1903	22
Filed June 30, 1903, to June 30, 1904	38
	60
Disposed of June 30, 1903, to June 30, 1904	42
Still pending	18
Total number of cases:	
Civil	85
Criminal	60
	145
Total number disposed of:	
Civil	60
Criminal	42
	102
Still pending	43

## ROOSEVELT COUNTY.

CIVIL.	
Pending June 30, 1903	1
Filed June 30, 1903, to June 30, 1904	27
	28
Disposed of June 30, 1903, to June 30, 1904	7
Still pending	21

No criminal cases have been filed, as there has not been any court held in said county. The county was created by the legislature of 1902.

## RECAPITULATION.

Total:	
Socorro County	384
Lincoln County	315
Chaves County	356
Eddy County	145
Roosevelt County	28
Total	1,228
Disposed of:	
Socorro County	196
Lincoln County	99
Chaves County	160
Eddy County	102
Roosevelt County	7
	564
Pending:	
Socorro County	188
Lincoln County	216
Chaves County	196
Eddy County	43
Roosevelt County	21
	664
	1,228

## REPORT OF THE SOLICITOR-GENERAL.

[E. L. BARTLETT, *Solicitor-General*.]

During the past year I have given 25 written opinions, at the request of different Territorial officers, upon the construction of the laws relating to their different duties and functions.

I have also written a large number of official letters giving advice and directions to such officers and boards, on the construction of the law governing their duties, in reply to requests from them for such information.

I have examined and passed upon numerous applications for requisitions on the governors of other States and Territories and the Republic of Mexico for the rendition of criminals, and also upon requisitions made by them upon you, and by your direction held an examination and took testimony upon the requisition of the governor of Colorado for the rendition of Armando Trujillo, which resulted in the same being denied for reasons stated in your opinion.

I have passed upon the forms of bond submitted by the various officers of the Territory, and different boards, and those submitted by banks desiring to act as depositors of the public funds.

I have examined the title to and deeds for property donated under the act of 1903 for the blind institute at Alamogordo and the reform school at El Rito.

At your request I prepared abstract of the laws governing the duties of county treasurers and collectors and gave the same to the auditor for distribution to those officers.

Upon the petition of a large number of citizens at Texico, requesting that a proper depot be established at that point by the Pecos Valley and Northeastern Railroad Company, I entered into correspondence with the manager, resulting in the depot being established without resort to any legal proceedings and, I believe, entirely to the satisfaction of the people.

I acted, at your request, in an advisory capacity to the commission for the refunding of railroad-aid bonds, which was created by the last legislature, and of which commission you are the chairman.

In reply to a letter from the honorable Secretary of the Interior to yourself in regard to the truth of a report that our public schools were being supported entirely by gaming and liquor licenses, on the 15th of February last I addressed you the following letter:

DEAR SIR: In reply to your request for information as to the inquiry made by J. Converse Gear, director Congregational Education Society, in a letter by him addressed to the honorable Secretary of the Interior, and by him referred to you for consideration and report, in which the writer states that the secretary of his society while in the Territory heard that the public schools had been established only in those towns where the revenue from licenses for liquor selling and gambling were sufficient to pay the salaries of the public school teachers, and that in towns or villages where there were no saloons there were no public schools. I would say that there is absolutely no truth in or foundation for any such statement, as could have been readily ascertained, by anyone interested, from your report to the honorable Secretary of the Interior for the year 1902, wherein, at pages 45 to 72, is given a full résumé of public school statistics, from which it appears that there are enrolled in city schools 7,245 pupils and in rural schools 27,984, outside of Territorial educational institutions, Indian schools, private and sectarian schools. Of the latter the Presbyterians have 23, the Catholics 18, Methodists 12, Baptists 4, and Congregationalists 2. Under the law every election precinct in the Territory is a school district, of which there are 590 in the Territory.



The revenue for public schools in the Territory is derived, first, from a general tax upon all the property of the Territory of 2 mills on the dollar, which is paid into the county treasury to the credit of the general school fund of each county, which is distributed quarterly by the county superintendent in proportion to the number of school children of each district. Second, 5 per cent of the receipts from sale of public lands in the Territory and the rent received from the leasing of school sections. These are paid into the Territorial treasury and distributed by the superintendent of public instruction to the different school districts in proportion to the school population, as also a poll tax of \$1 upon every able-bodied male citizen, which goes into the general school fund of the district wherein it is collected.

Section 1548, Code of Laws of 1897, provides that there should be paid into the county treasury for the benefit of the general school fund, first, the proceeds of all sales of intestate estates which escheat to the Territory; second, all forfeitures or recoveries on bonds of county, precinct, or Territorial school officers; third, the proceeds of all fines collected for the violation of the penal laws; fourth, the proceeds of the sales of lost goods or estrays; fifth, all moneys arising from licenses imposed upon wholesale and retail liquor dealers, distilleries, breweries, wine presses which now pay license or may hereafter be required to pay license, and gaming licenses. One-third of the money arising from these sources is paid to the county treasurer for the benefit of the general school fund of each county in which collected, and two-thirds goes to the school district wherein such license was paid.

In addition to these general sources of revenue, each school district is authorized to levy a tax of 5 mills on the dollar for general school purposes and a special levy of 5 mills for meeting old debts and erecting school buildings.

It is believed that no State or Territory in the Union provides so large a levy by a direct tax for school purposes as does New Mexico. Our school laws are modeled upon those of Kansas and Illinois, and were first passed in 1891. They have been amended by different legislatures so as to meet new conditions, but remain substantially as then passed.

In reply to the request for copy of the laws, rules, and regulations relating to the public school system of the Territory, the compilation of the school laws by the superintendent of public instruction contains them all; and his report for 1902 will show in detail much interesting information with reference to our public school system and its operation.

Very respectfully, yours,

EDWARD L. BARTLETT,  
*Solicitor-General.*

HON. MIGUEL A. OTERO, *Governor.*

In regard to the mandamus proceedings by the board of regents of the agricultural college against the treasurer of the Territory to compel him to turn over \$25,000 for the benefit of that institution, to which I referred in my last report, I would say, that the matter was argued before the district court of Santa Fe County and my position was sustained, whereupon the regents appealed to the supreme court, where the case was fully argued at its last session, and is now under advisement.

The new office of traveling auditor, created by the last legislature, has proved to have been of the greatest benefit to the Territory and the different counties, largely owing to the very efficient manner in which its duties are exercised by the present incumbent. It has been necessary in the administration of that law to have many consultations with him, as well as to write a number of official letters.

The quo warranto proceedings to which I referred in my last report, involving the constitutionality of acts of the last legislature, were heard in the court below and determined adversely. I authorized appeals in them, and they were argued at the last term of the supreme court, which now has them under advisement.

I brought a civil suit for the Territory against the Taos County Bank and the sureties on its bond as a Territorial depository, and

recovered judgment for the Territory in the sum of \$4,167.33. From this an appeal was taken, but has not yet been submitted.

There were only two criminal appeals argued at the last term of the supreme court, although there were four others which should properly have been heard, except for the fact that time was extended for the appellants to prepare their transcripts, which takes them over to the next term. This decrease in the number of criminal appeals not only speaks well for the law-abiding character of our people, but is a compliment to the care with which our trial courts conduct their business. By direction of the supreme court I prepared information for the disbarment of two attorneys, which were acted upon by the supreme court, one of them being suspended from practice for one year and the other disbarred from practice entirely.

I have served as a member of the United States commission to select lands for the Territory under the act of Congress of June 21, 1898, and as a member of the Territorial board of public lands to sell and lease for the benefit of the Territory the lands thus selected. There were several contests before this board during the last year in which regular hearings were had, one case lasting for three days. I have also acted as a member of the capitol custodian committee, which has charge of the capitol building and grounds at Santa Fe. Each of these boards and commissions has held regular meetings monthly and numerous special meetings.

I would again call your attention, and through you that of Congress, to the necessity for providing by a proper act the time within which acts of the Territorial legislature should go into effect. Under our present law, unless otherwise provided in the act, all new laws take effect thirty days after their passage. But the custom of the legislature for many years past has been to provide "that this act shall take effect and be in force from and after its passage." This practice works a great hardship and injustice on our people as well as upon the courts. The last legislature passed 122 acts, all but a few of which were to take effect immediately. The legislature adjourned on the 19th of March, and the laws were not printed and ready for distribution until July. During that interval a term of court had been held in every county in the Territory, and neither judges, attorneys, nor litigants were informed of what laws had been repealed or amended, or what new ones had been enacted.

I would also renew my recommendation that Congress provide for distributing its acts to the different Territorial officials as soon as they are published, as many of these acts directly affect the conduct of business in the Territory, and at present even our judges are not supplied with them.

#### OFFICE OF THE DISTRICT ATTORNEY.

[E. C. ABBOTT, *District Attorney for the Counties of Santa Fe, Rio Arriba, Taos, and San Juan.*]

#### SANTA FE COUNTY.

Cases pending July 1, 1903 .....	30
Cases instituted from July 1, 1903, to June 30, 1904.....	61
Cases disposed of by trial and judgment .....	8
Cases disposed of by dismissal .....	35
Cases disposed of by being dropped from the docket .....	15
Cases pending June 30, 1904 .....	33

*Nature of cases instituted from July 1, 1903, to June 30, 1904.*

Appeals .....	3
Assault .....	21
Branding animals unlawfully .....	1
Carrying deadly weapon .....	1
Embezzlement .....	3
Forgery .....	2
Grand larceny .....	3
Keeping bawdy house .....	2
Larceny .....	2
Malicious trespass .....	1
Obtaining money by false pretenses .....	2
Permitting minors to frequent saloons .....	8
Selling liquor to minors .....	9
Seduction .....	1
Wife beating .....	2
Total .....	61

## RIO ARRIBA COUNTY.

Cases pending July 1, 1903 .....	28
Cases instituted from July 1, 1903, to June 30, 1904 .....	40
Cases disposed of by trial and judgment .....	8
Cases disposed of by dismissal .....	16
Cases dropped from the docket .....	2
Cases pending June 30, 1904 .....	42

*Nature of cases instituted from July 1, 1903, to June 30, 1904.*

Appeals .....	3
Assaults .....	8
Burglary .....	3
Carrying deadly weapons .....	3
Discharging pistol in settlement .....	1
Embezzlement .....	1
Grand larceny .....	10
Larceny .....	1
Murder .....	3
Malicious trespass .....	2
Violation of the liquor law .....	1
Violation of the gaming law .....	3
Disturbing religious meeting .....	1
Total .....	40

## TAOS COUNTY.

Cases pending July 1, 1903 .....	11
Cases instituted from July 1, 1903, to June 30, 1904 .....	29
Cases disposed of by trial and judgment .....	7
Cases disposed of by dismissal .....	6
Cases disposed of by being dropped from the docket .....	9
Cases pending June 30, 1904 .....	18

*Nature of cases instituted from July 1, 1903, to June 30, 1904.*

Appeals .....	4
Assaults .....	2
Arson .....	1
Barratry .....	1
Embezzlement .....	10
Murder .....	2
Permitting minors to frequent saloons .....	1
Violation of liquor law .....	1
Violation of pharmacy law .....	3
Violation of medical law .....	1
Violation of banking law .....	3
Total .....	29



## SAN JUAN COUNTY.

Cases pending July 1, 1903.....	15
Cases instituted from July 1, 1903, to June 30, 1904.....	19
Cases disposed of by dismissal.....	12
Cases disposed of by trial and plea.....	8
Cases disposed of by being dropped from the docket.....	3
Cases pending June 30, 1904.....	11

*Nature of cases instituted from July 1, 1903, to June 30, 1904.*

Appeals.....	2
Assaults.....	4
Burglary.....	2
Discharging pistol in settlement.....	1
Grand larceny.....	7
Violation of liquor law.....	3
Total.....	19

## SUMMARY.

Cases pending July 1, 1903.....	84
Cases instituted from July 1, 1903, to June 30, 1904.....	149
Cases disposed of by dismissal.....	69
Cases disposed of by trial and judgment.....	31
Cases dropped from the docket.....	29
Cases pending June 30, 1904.....	104

*Nature of cases instituted from July 1, 1903, to June 30, 1904.*

Appeals.....	12
Assaults.....	35
Arson.....	1
Barratry.....	1
Burglary.....	5
Branding unlawfully.....	1
Carrying deadly weapons.....	4
Discharging pistol in settlement.....	2
Disturbing religious meeting.....	1
Embezzlement.....	14
Forgery.....	2
Grand larceny.....	20
Keeping bawdy house.....	2
Larceny.....	3
Murder.....	5
Malicious trespass.....	3
Obtaining money by false pretenses.....	2
Permitting minors to frequent saloon.....	9
Selling liquor to minors.....	9
Seduction.....	1
Wife assaulting.....	2
Violation of liquor law.....	5
Violation of gaming law.....	3
Violation of pharmacy law.....	3
Violation of medical law.....	1
Violation of banking law.....	3
Total.....	149

STEPHEN B. DAVIS, Jr., *District Attorney for San Miguel, Leonard Wood, Mora, and Quay counties.*

During the last year there have been no criminal cases in this district which call for special mention. The counties have been quiet and orderly. Court was held this spring in the counties of Quay and Leonard Wood for the first time since their organization, both grand and petit juries being called in Leonard Wood, but only a grand jury

in Quay. The large number of cases dismissed and stricken from the docket in these two counties is due to the fact that no term had been held in the former county of Guadalupe for several years, many of the defendants were dead or their whereabouts unknown, and in other cases the witnesses for the Territory were not to be found.

The following table shows the disposition of criminal cases during the year:

## SAN MIGUEL COUNTY.

Pending June 30, 1903	57
New cases	110
	167
Dismissed or stricken from docket	77
Convictions	17
Pending June 30, 1904	73
	167

## MORA COUNTY.

Pending June 30, 1903	24
New cases	29
	53
Dismissed and stricken from docket	17
Convictions	3
Change of venue	5
Pending June 30, 1904	28
	53

## QUAY COUNTY.

Transferred from Guadalupe County	12
New indictments	19
	31
Convictions	1
Dismissed	4
Pending June 1, 1904	26
	31

## LEONARD WOOD COUNTY.

Transferred from Guadalupe County	55
New indictments	31
	86
Dismissed or stricken from docket	47
Convictions	7
Pending June 30, 1904	32
	86

J. LEAHY, *District Attorney for Colfax and Union Counties.*

## COLFAX COUNTY.

Cases pending September 1, 1903	62
New indictments returned during the year	54
Cases disposed of during the year	70
Balance now pending	46

Of the new cases returned two were for murder, convictions being had promptly in both. These two are the only murder cases that have occurred in the county during the past year. The remainder were for minor offenses, such as simple assaults, petty larceny, carrying arms, and violations of the Sunday law.

## UNION COUNTY.

Cases pending September 1, 1903	21
New indictments returned during the year	37
Cases disposed of during the year	30
Balance now pending	28

Of the new cases, one was for murder, conviction being had therein. The remainder of the new cases were for stock larcenies upon the range, violations of the Sunday and license law; also unlawful carrying of arms.

In neither of the above-named counties is any aggravated case now pending, except in a few instances which are old cases, where the defendants fled from justice before their arrest could be made. There has been no escape of any criminal from either county during the past two years, and at present the peace and quietude of both counties was never better and, with the exception of the murder cases herein specified, crimes of all kinds were never less.

FRANK W. CLANCY, *District Attorney for the Counties of Bernalillo, Sandoval, Valencia, and McKinley.*

In Bernalillo County the criminal business is summarized as follows:

Cases pending June 30, 1903.....	35
New cases during year.....	101
Total .....	136
Disposed of as follows:	
Dismissed or stricken from docket with leave to reinstate.....	17
Convictions .....	35
Acquittals .....	7
Venue changed to other counties.....	2
No bills.....	16
	77
Pending June 30, 1904 .....	59

The 101 new cases are classified as follows:

Murder .....	2
Crimes against persons, felonies.....	22
Crimes against property, felonies.....	49
Crimes against public justice, felonies.....	1
Crimes against public policy, felonies.....	1
Assault and battery.....	2
Other minor offenses.....	24
Total .....	101

In Valencia County the criminal business is summarized as follows:

Cases pending June 30, 1903.....	17
New cases during year.....	42
Total .....	59
Disposed of as follows:	
Dismissed or stricken from the docket with leave to reinstate.....	14
Convictions .....	11
Change of venue to other county.....	1
Acquittals .....	8
No bills.....	9
	43
Pending June 30, 1904 .....	16

The 42 new cases are classified as follows:

Murder .....	9
Crimes against persons, felonies.....	12
Crimes against property, felonies.....	14
Assault and battery.....	1
Other minor offenses.....	6
Total .....	42



In McKinley County the criminal business is summarized as follows:

Cases pending June 30, 1903 .....	5
New cases during year .....	11
<b>Total .....</b>	<b>16</b>
Disposed of as follows:	
Dismissed or stricken from docket with leave to reinstate.....	6
Convictions .....	6
No bills.....	3
	<b>15</b>
Pending June 30, 1904.....	1

The 11 new cases are classified as follows:

Crimes against persons, felonies .....	3
Crimes against property, felonies .....	7
Crimes against public policy, felony.....	1
<b>Total .....</b>	<b>11</b>

In Sandoval County no court has yet been held, so that there are no criminal cases on the docket of that court.

It will be noticed that, as predicted in my last annual report, there has been a considerable increase in the amount of criminal business in Valencia County, principally due, as was expected, to the coming into the county of a large number of outsiders from other countries. The cause of this increase should not be forgotten, and the change is not to be imputed as a fault to the permanent resident population of the county.

Notwithstanding the increase in the number of cases, it will be noted that no more cases were left on the docket at the end of the year than were to be found there at the end of the preceding year.

In view of the approaching session of the legislative assembly, I venture again to call your attention to the condition of the statutes with regard to the collection of delinquent taxes, and, without repeating what was said in my report of a year ago, will merely refer to that report as indicating conditions which can be improved.

Another subject which is necessarily forced upon the attention of every district attorney is that of the assessment of property for purposes of taxation. You have more than once, and especially in your general message to the last legislature, recommended a change in the present system which would remedy the evils of which we are all so well aware. I can not add anything to what you have said on the subject, but by calling attention particularly to conditions in Bernalillo County it may be possible to emphasize the value of your recommendations.

In the year 1895 the assessed valuation of property in Bernalillo County was \$8,885,049. Since that time McKinley and Sandoval counties have been cut off, but the assessment of property within the territory embraced within those two counties will not exceed \$1,700,000, so that in 1895 the assessed valuation of property in what is now Bernalillo County was over \$7,000,000. In 1903 the assessed valuation of that property was \$2,905,850, although it is a notorious fact that the amount of value of property in the present county has enormously increased in the last nine years. Any system which produces such results should be changed.

In consequence of your recommendations, the last legislative assem-

bly passed an act giving the Territorial board of equalization power to fix the valuation of property in each county, and authorizing the Territorial auditor to apportion among the different counties of the Territory the amount of revenue required for Territorial purposes, and to direct the commissioners of each county to levy a tax sufficient to raise the amount required from that county. The power given to the Territorial board was ample, but that body did not see fit to fix the valuation of property in the several counties at figures remotely approaching the real value of the property. For Bernalillo County the valuation was fixed at \$3,500,000.

If it had been fixed at \$7,000,000 the task of the assessor and county commissioners in bringing the assessment up to that figure would not have been as difficult as it has been under the present valuation. Tax-payers would have understood that it was absolutely necessary that there should be a general rise of more than double former assessments, and would have made no serious objections. The result reached appears to justify these statements, as the county assessor recently stated at a meeting of the county commissioners, when the board was about to levy taxes for the coming year, that the assessed valuation would not exceed \$3,100,000.

It is respectfully urged that the present system, by which the valuation of property for taxing purposes is committed to county officers, who are almost always desirous of continuance in office and unwilling to incur the hostility of their fellow-citizens, should be entirely abolished, and the business of making assessments committed to Territorial officers, to be appointed by the governor and confirmed by the legislative council; or if this should be impossible, and the various counties should desire to continue what you justly call "the present ineffective and ruinous system," additional legislation should be had, of a mandatory character, as to what shall be done by the Territorial board of equalization.

It is clear that the system inaugurated this year under the last act of the legislative assembly is in danger of breaking down through the timidity or inefficiency of county officers. If a county like Bernalillo, which was required to have an assessment of \$3,500,000, falls more than \$400,000 short, it is natural to expect that the same thing may occur elsewhere, and, as a result, the Territory will be left without a sufficient amount of revenue to pay its expenses next year. In such cases some central Territorial authority ought to have the power to bring the assessment of the recalcitrant county up to the proper figure, and should be furnished with funds sufficient to pay all necessary expenses of obtaining the information to that end. A board that holds two or three meetings a year does not seem adequate for such work.

A. A. SEDILLO, *District Attorney for Socorro County.*

The status of civil cases in which either the Territory or county is a party is as follows:

Pending June 30, 1903, per last report.....	10
Filed from June 30, 1903, to June 30, 1904.....	11
Total .....	21
Disposed of from June 30, 1903, to June 30, 1904.....	9
Pending June 30, 1904.....	12

*Criminal cases.*

Pending June 30, 1903, per last report.....	69
Filed from June 30, 1903, to June 30, 1904.....	85

Total .....	154
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## Disposed of:

Acquittals, 2 defendants.....	1
Change of venue.....	1
Convictions and pleas of guilty.....	20
Dismissals .....	30
Dropped with leave.....	1
Habeas corpus .....	2
Mistrials, 2 pending.....	
No bills .....	28
Nolle prosequi .....	1
Preliminary examination .....	1
	85

Pending June 30, 1904.....	69
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The pending cases may be classified as follows:

Assault to kill and with deadly weapon.....	7
Assault with intent to commit rape.....	1
Carrying deadly weapons.....	3
Defacing and effacing brands of neat cattle.....	2
Election frauds .....	4
Embezzlement .....	1
Grand larceny .....	3
Injury to animals.....	4
Larceny of public records.....	1
Larceny of neat cattle, horses, and sheep.....	16
Murder (7) .....	8
Obtaining money by false pretenses.....	2
Perjury .....	1
Violation of butcher laws.....	3
Violation of school laws.....	1
Cases from justices' courts—minor offenses.....	12
	69

R. M. TURNER, *District Attorney for the Counties of Grant and Sierra.*

Following is the report of District Attorney Turner:

## GRANT COUNTY.

Criminal cases docketed prior to and pending July 1, 1903.....	17
Criminal cases docketed July 1, 1903, to June 30, 1904.....	181
No bills docketed July 1, 1903, to June 30, 1904.....	37

Total .....	235
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## Cases disposed of July 1, 1903, to June 30, 1904:

Nolle .....	81
Dropped with leave to reinstate.....	3
Acquittals .....	10
Convictions .....	56
Change of venue.....	9
No bills .....	37
Balance pending June 30, 1904.....	39

Total .....	235
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## SIERRA COUNTY.

Criminal cases pending June 30, 1903	34
Criminal cases docketed from July 1, 1903, to June 30, 1904	23
No bills filed during above period	2

Total	59
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## Cases disposed of during above period:

Nolle	13
Convictions and pleas of guilty	2
Acquittals	4
Change of venue	5
Dropped with leave	1
No bills	2
Balance pending June 30, 1904	32

Total	59
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J. M. HERVEY, *District Attorney for the Counties of Chaves, Eddy, and Roosevelt.*

The report of J. M. Hervey, district attorney, is as follows:

## CHAVES COUNTY.

## Cases on docket July 1, 1903:

Criminal	52
Civil	5
Indictments returned during the year (October term)	116
Civil cases filed during the year	1

## DISPOSITION.

## Civil:

Judgments for Territory	2
Dismissed by the Territory	2

4

## Criminal:

Convictions	6
Acquittals	1
Disposed of by plea of guilty	48
Quashed on motion	1
Nolled	11

67

71

Cases now pending (civil and criminal on docket)	103
Cases pending the action of next grand jury	22

Total cases now pending in Chaves County	125
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## EDDY COUNTY.

## Cases on docket July 1, 1903:

Criminal	20
Civil	5
Indictments returned during the year (October term)	21

46

## DISPOSITION.

Civil (settled out of court)	3
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## Criminal:

Convictions	7
Acquittals	2
Nolled	5

## Criminal—Continued.

Disposed of by plea of guilty	4
Dismissed with leave to reinstate	8
	26
	29
Cases now pending on docket (civil and criminal)	17
Cases pending the action of next grand jury	16
Total now pending	33

## ROOSEVELT COUNTY.

There has been no court held in Roosevelt County during the past year, or, in fact, since its organization, and consequently there are no cases pending there on indictment.

Cases awaiting the action of the grand jury July 1, 1903	7
Cases bound over to await action of grand jury since July 1, 1903	7
Total now pending	14

## CLASSIFICATION.

## Cases pending:

Assault (felony)	14
Assault (misdemeanor)	1
Arson	1
Burglary	2
Bigamy	1
Concealing stolen property	1
Deadly weapons (carrying, firing, flourishing, etc.)	20
Fraud (criminal)	11
Embezzlement	1
Forgery	4
Gaming (illegal)	3
Homicide	7
Larceny (felony)	40
Live stock (driving, riding, branding, etc.)	10
Minors (selling liquor to, permitting to loiter, etc.)	43
Perjury	2
Quarantine law (violation of)	1
Sunday law (violations of)	5
	167

## Nolled, dismissed, or quashed:

Homicide (indictment quashed)	1
Sunday law (violation of) nolled	1
Assault (felony) nolled	2
Assault (misdemeanor) nolled	1
Deadly weapon (carrying) nolled	1
Embezzlement	1
Fraud (obtaining money by false pretenses) dismissed	4
Larceny (part nolled and part dismissed with leave to reinstate)	13
Live stock (illegal branding, driving, riding, etc.)	2
	26

## Disposed of by pleas of guilty:

Assault (misdemeanor)	1
Deadly weapons (flourishing)	1
Embezzlement (officer wrongfully withholding money)	1
Homicide (murder in second degree)	1
Larceny	4
Sunday law (violation of)	42
	52

## Disposed of by trials:

Felonious assault (convicted)-----	4
Firing deadly weecapon (convicted)-----	1
Fraud (convicted)-----	1
Larceny (convicted, 3; acquitted, 2)-----	5
Homicide (convicted, 4; acquitted, 1)-----	5
	16

Total ----- 261

## Civil cases:

Actions to recover penalty of appearance bonds (pending) -----	4
Actions to recover taxes (settled)-----	3
Judgment on bail bonds for Territory (\$5,300)-----	2
Scire facias proceedings to bring other forms of action (dismissed) -	2
	11

Total ----- 272

## FINANCIAL.

There has been nothing actually realized to the Territory during the time covered by this report upon forfeited recognizances or other actions for the recovery of money purely; judgments have been recovered in behalf of the Territory in this class of cases amounting to about \$5,300 and actions are now pending for amounts aggregating about \$1,000.

## NEW MEXICO BAR ASSOCIATION.

[EDWARD L. BARTLETT, *Secretary.*]

The eighteenth annual session of the New Mexico Bar Association was held in the supreme court room of the capitol building on January 6, 1904. The report of the secretary showed at that time 67 members, of whom 21 were nonresidents. One of the latter, Hon. William H. Pope, has returned from the Philippines, where he was judge of the first instance, and he is now an associate justice of our supreme court. Nine new members were admitted, making the membership at this time 76. All the other members of that court are members of this association with the exception of the recently appointed Judge Mann.

The rules of the supreme court, prepared at its request by the association, were presented and adopted by it without change. The report of the treasurer showed a balance on hand of \$300, with no liabilities, and the association owns a library of rare and valuable books. It is generally in a flourishing condition, doing excellent work not only for the bar but for the courts and the people. It was organized in the year 1886, and was among the very first of such associations to be organized west of the Mississippi River, and of the 38 State and Territorial bar associations in the United States 19 were organized before and 17 after this one. its objects are fully set out in article 2 of its constitution, which reads as follows:

The association is formed to cultivate the science of jurisprudence, to promote reform in the law, to facilitate the administration of justice, to elevate the standard of integrity, honesty, and courtesy in the legal profession, to encourage a thorough and liberal legal education, and to cherish a spirit of brotherhood among the members thereof. This association shall not indorse or recommend any person for any official position.



It has fully lived up to this declaration of its principles.

It is a notable fact that all bills recommended by it to the legislature have become laws, and none of them have been repealed or amended in any material manner.

At the last meeting a special committee was appointed, of which an associate justice of the supreme court was made the chairman, for the purpose of preparing a codification of the criminal law and procedure of the Territory, and the committee on law reform was directed to prepare a similar codification of the civil code of procedure, both great works, involving a large amount of labor.

The next meeting of the association will be held in the city of Las Vegas on August 29. Its present officers are as follows: President, William C. Wrigley, Raton; vice-president first district, W. J. McPherson, Santa Fe; vice-president second district, E. W. Dobson, Albuquerque; vice-president third district, R. M. Turner, Silver City; vice-president fourth district, W. B. Bunker, Las Vegas; vice-president fifth district, J. M. Hervey, Roswell; secretary, Edward L. Bartlett, Santa Fe; treasurer, George W. Knaebel, Santa Fe. Delegates to American Bar Association: W. J. Mills, W. A. Hawkins, and B. S. Baker. Delegates to National Bar Association: W. B. Walton, E. V. Chaves, and J. Leahy. Executive committee: The president, the secretary ex officio, L. O. Fullen, U. S. Bateman, and E. C. Abbott.

## PART IV.—TERRITORIAL OFFICIALS.

### SECRETARY OF NEW MEXICO.

[JAMES W. RAYNOLDS, *Secretary.*]

GENERAL ELECTION, 1904.

On November 8, 1904, there will be held the general election for the selection of a Delegate to the Fifty-ninth Congress, members of the thirty-sixth legislative assembly, and all county officers in the several counties. Preparations for this election are completed in so far as this office is concerned, the registration and poll books having been prepared and forwarded to the proper officers of the various counties throughout the Territory.

### COMMISSIONS.

During 1903 commissions were issued to 9 commissioners of deeds for New Mexico in other States, to 223 notaries public in the several counties, to 40 Territorial and county officials, to 21 members of the National Guard, and to 148 delegates to various industrial conventions throughout the United States.

*Commissioners of deeds for New Mexico in other States and countries.*

Name.	Post-office.	Term expires.
Charles Edgar Mills .....	New York City .....	Jan. 22, 1907
John A. Peck .....	St. Louis, Mo. ....	Mar. 3, 1907
Charles Hall Adams .....	Boston, Mass. ....	Feb. 23, 1907
J. Burke Hendry .....	London, England .....	May 8, 1907
Samuel L. Taylor .....	Philadelphia, Pa. ....	Apr. 24, 1907
Joseph B. Braman .....	New York City .....	Aug. 1, 1907
Alfred Mackay .....	do .....	Oct. 15, 1907
James L. King .....	San Francisco, Cal. ....	Nov. 17, 1907
Edwin F. Corey .....	New York City .....	Nov. 23, 1907
Silas S. Willard .....	Chicago, Ill. ....	Nov. 27, 1907
Simeon W. King .....	do .....	Nov. 30, 1907
Charles S. Bundy .....	Washington, D. C. ....	Dec. 7, 1907
Isidor J. Pocher .....	New York City .....	Dec. 4, 1907
Thomas J. Hunt .....	Philadelphia, Pa. ....	May 7, 1908

### CORPORATIONS.

The past year has shown a slight decrease in the total number of corporation charters issued, accompanied, of course, by a similar decrease in the amount of fees collected for the Territorial treasury. The total capitalization was somewhat larger, however, than that authorized in 1903. Upon the whole, the general condition of this

particular branch of the department is satisfactory, and it has been found that the act passed in 1903 regulating the fees for filing articles of incorporation according to a percentage charge upon the capital stock has worked satisfactorily both to the investing public and this office.

Statistics comparing the filings made by domestic and foreign corporations, showing the character of the various charters issued and the amount of fees collected during the fiscal years 1903 and 1904, will be found in Tables I, II, and III.

For the information of the public in general and the prospective investor in particular, there will be found appended a brief abstract of the laws relating to the organization of domestic and the admission of foreign corporations.

*Regulations governing the organization of domestic and admission of foreign corporations, with schedule of filing fees.*

FILING FEES IN EFFECT APRIL 1, 1903.

(Remittances should be made by bank draft or postal or express money order.)

All corporations organized or consolidated under the laws of New Mexico, or under the laws of any other Territory, State, or country, shall, before doing business in this Territory, file in the office of the secretary of New Mexico articles of incorporation in writing, according to law in such case provided; and at the time of such filing the secretary shall collect the following fees:

For railroad or other corporations formed for pecuniary profit, 10 cents for each and every \$1,000 of capitalization, and a like fee upon each subsequent increase of capital, but in no case less than \$25.

For filing any certificate of amendment to articles of incorporation other than one increasing capital stock, or any translated copy of articles or amendments, \$10.

For filing any certificate of business and agent, when required by law, \$5.

For corporations organized for benevolent, charitable, educational, religious, and scientific purposes having no capital stock, \$1.

For filing any certificate of amendment to such articles of incorporation, \$1.

For filing any certificate, instrument, or document other than those specified above, \$1.

For certified copies, 10 cents per folio of 100 words, plus \$1 for the certificate.

Every corporation, domestic or foreign, shall file with the recorder of deeds of the county in which its principal place of business in this Territory is located a copy of its articles of incorporation, of every amendment thereto, and likewise any certificate designating agent and place of business in this Territory, certified from the office of the secretary of the Territory; and it shall be a misdemeanor for any recorder to file or record in his office any incorporation papers or copies thereof not previously certified by the secretary of the Territory. (Chapter 114, Laws 1903.)

PUBLICATION OF ARTICLES.

Every corporation desiring to organize under the laws of this Territory, and every foreign corporation, in addition to other requirements now provided by law, desiring to do business under the laws of this Territory, shall, within thirty days from the date of the filing of its articles of incorporation with the secretary of the Territory, cause to be published (one insertion only required) a certified copy of its articles of incorporation in some newspaper of general circulation in the county where its principal place of business is designated, and, in the case of foreign corporations, in the county wherein resides the agent of said corporation upon whom process may be served.

A certificate of such publication, properly sworn to by the publisher, shall be filed with the secretary of the Territory within twenty days after the date of the last publication.



Any corporation, domestic or foreign, neglecting or refusing to comply with the provisions of this act shall be fined in a sum not less than \$100 for each and every day it shall so refuse and neglect to comply with the provisions of this act and upon complaint properly lodged with the solicitor-general of this Territory, in a proceeding to be brought by him, the articles of incorporation and charter of the corporation violating the provisions hereof shall be vacated, and thereafter shall not be permitted to conduct or operate any business in this Territory. (Chapter 77, Laws 1901.)

#### ABSTRACT OF LAWS GOVERNING THE FORMATION OF COMPANIES IN NEW MEXICO.

Careful compliance with these provisions will obviate delays incident to returning copies for correction.

(1) Corporations may be formed for benevolent, charitable, educational, and scientific purposes and for any legitimate business enterprise.

(Special provisions for railroads, irrigation companies, banking, insurance, and building and loan associations.)

(2) Any three or more persons who desire to form a company for one or more of the above purposes shall make, sign, and acknowledge before some official competent to take the acknowledgment of deeds, and file in the office of the secretary of the Territory their articles in writing, setting forth—

I. The full names of such persons.

II. The corporate name of the company.

III. The objects for which the company shall be formed.

IV. The amount of capital stock and number of shares into which divided.

V. The term of existence, not to exceed fifty years.

VI. The number of directors, and their names, who shall manage the concerns of the company for the first three months. (The board of directors must consist of at least three members who are stockholders, a majority citizens of the United States and one-third residents of New Mexico.)

VII. The name of the city or town and county where the principal place of business is to be located.

(Whenever a majority of the stock is owned in another State or Territory, the principal office of such company may be located in such State or Territory, and meetings of the stockholders and directors may be held there: *Provided*, That such company shall file with the secretary of New Mexico a certificate designating a principal place of business in this Territory and agent residing thereat, upon whom process may be served, in the same manner as is required by foreign corporations.)

VIII. Date, signatures, and acknowledgment in the same manner as deeds are required to be acknowledged.

(3) If any corporation fail to organize and commence the transaction of business within two years from the date of filing articles, its corporate powers shall cease. (See 415, Compiled Laws of 1897.)

#### AMENDING ARTICLES OF INCORPORATION.

The provisions of law in reference to amending articles of incorporation will be found in sections 432 and 433 of the Compiled Laws of 1897, and the requirements are substantially as follows:

The stockholders' meeting may be called by a notice signed by at least a majority of directors, and published for at least four weeks in some newspaper published in the county in which the New Mexico office is located, unless all stockholders waive or accept notice in writing. The notice must specify the object of the meeting, time and place where it shall be held, and must contain a copy of the proposed amendment. If at any meeting so called two-thirds of all the shares of the stock be voted in favor of the amendment, it is declared adopted. A certificate setting forth all of these facts, signed and acknowledged by the chairman and secretary of the meeting and certified by a majority of the directors, must be filed in this office, and a copy, certified from here, with the recorder of deeds in the county where the New Mexico office is located. When the amendment increases the capital stock, the certificate must set forth the amount of capital actually paid in and the amount of the debts and liabilities of the corporation.

## LAWS RELATIVE TO FOREIGN CORPORATIONS DOING BUSINESS IN NEW MEXICO.

[As amended in 1903.]

## HOW ADMITTED.

SEC. 445. Every company or corporation incorporated under the laws of any foreign state or kingdom, or of any State or Territory of the United States, beyond the limits of this Territory, and now or hereafter doing business in this Territory, shall file in the office of the secretary of the Territory a copy of its charter of incorporation, or of its articles of incorporation, together with the law or laws under which it is incorporated, each duly certified and authenticated by the proper authority of such foreign state, kingdom, or territory.

Such company shall also, before it is authorized or permitted to do business in this Territory, make and file with the secretary of the Territory a certificate signed by the president and secretary of such company, duly acknowledged, designating the principal place where the business of such company shall be carried on in this Territory, and an authorized agent or agents residing at such principal place of business upon whom process may be served.

A copy of such charter or articles of incorporation and certificate of place of business and agent, duly certified by the secretary of this Territory, shall be filed in the office of the recorder of deeds in the county in which the principal place of business of such corporation shall be.

Such corporations shall have the same powers and shall be subject to all the liabilities and duties as corporations of a like character organized under the general laws of this Territory. But they shall have no other or greater powers, and no foreign or domestic corporation established or maintained in any way for pecuniary profit of its stockholders or members shall purchase or hold real estate in this Territory, except as provided for in this act and the laws of the Territory now existing, and no corporation doing business in this Territory incorporated under the laws of any other State shall be permitted to mortgage, pledge, or otherwise incumber its real or personal property situated in this Territory, to the injury or exclusion of any citizen, citizens, or corporations of this Territory who are creditors of such foreign corporation, and no mortgage by any foreign corporation, except railroad and telegraph companies, given to secure any debt created in any other State shall take effect as against any citizen or corporation of this Territory until all its liabilities due to any person or corporation in this Territory at the time of recording such mortgage have been paid and extinguished.

## PENALTY.

SEC. 446. A failure to comply with the provisions of the foregoing section shall render each and every officer, agent, and stockholder of any such corporation so failing, jointly, severally, and personally liable on any and all contracts of such company made within this Territory during the time that such company is so in default. And in addition such company or corporation shall be liable to forfeit and pay to the Territory of New Mexico the sum of \$50 per day for each and every day in which it may carry on business or assume and hold itself out to carry on business in such Territory without fully complying with all the provisions hereinbefore provided, such sum to be collected by the solicitor-general; and until payment is made such company shall not be allowed to carry on business. Such money, when collected, shall be turned over to the treasurer of the Territory for the benefit of the general school fund.

## GROUNDS OF ATTACHMENT.

## SEC. 2686.

\* \* \* \* \*

First—When the debtor is not a resident of nor resides in this Territory.

\* \* \* \* \*

Sixth.—Where the defendant is a corporation whose principal office or place of business is out of this Territory, unless such corporation shall have a designated agent in the Territory upon whom service of process may be made in suits against the corporation.

\* \* \* \* \*

## Official register.

[Corrected to June 30, 1904.]

## TERRITORIAL OFFICERS.

Office.	Name.	Address.	Term expires.
Governor.....	Miguel A. Otero.....	Santa Fe.....	Jan. 22, 1906
Secretary.....	J. W. Raynolds.....	do.....	Jan. 13, 1906
Solicitor-general.....	E. L. Bartlett <sup>a</sup> .....	do.....	Mar. 17, 1905
Auditor.....	W. G. Sargent.....	do.....	Do.
Treasurer.....	J. H. Vaughn.....	do.....	Do.
Superintendent of penitentiary.....	H. O. Bursum.....	do.....	Do.
Superintendent of public instruction.....	J. Francisco Chaves <sup>b</sup> .....	do.....	Do.
Librarian.....	Lafayette Emmett.....	do.....	Do.
Commissioner of public lands.....	A. A. Keen.....	do.....	Do.
Adjutant-general.....	W. H. Whiteman.....	do.....	Do.
Traveling auditor and bank examiner.....	C. V. Safford.....	do.....	Do.
Game and fish warden.....	P. B. Otero.....	do.....	Do.
Public printer.....	J. S. Duncan.....	Las Vegas.....	Do.
JUDICIARY.			
<i>Supreme court.</i>			
Chief justice.....	W. J. Mills.....	Las Vegas.....	Jan. 31, 1906
Associate justice.....	John R. McFie.....	Santa Fe.....	Do.
Do.....	B. S. Baker.....	Albuquerque.....	Jan. 13, 1906
Do.....	F. W. Parker.....	Las Cruces.....	Jan. 10, 1906
Do.....	W. H. Pope.....	Roswell.....	Nov. 7, 1907
Do.....	E. A. Mann.....	Alamogordo.....	Recess.
Clerk.....	Jose D. Sena.....	Santa Fe.....	
<i>District courts.</i>			
First district (counties of Santa Fe, Rio Arriba, Taos, and San Juan):			
Judge.....	John R. McFie.....	Santa Fe.....	
Clerk.....	A. M. Bergere.....	do.....	
District attorney.....	E. C. Abbot.....	do.....	Mar. 17, 1905
Second district (counties of Bernalillo, McKinley, Valencia, and Sandoval):			
Judge.....	B. S. Baker.....	Albuquerque.....	
Clerk.....	W. E. Dame.....	do.....	
District attorney.....	F. W. Clancy.....	do.....	
Third district (counties of Donna Ana, Sierra, Grant, Luna, and Socorro):			
Judge.....	F. W. Parker.....	Las Cruces.....	
Clerk.....	J. P. Mitchell.....	do.....	
District attorney.....	W. H. H. Llewellyn, county of Dona Ana.	do.....	Do.
Do.....	R. M. Turner, counties of Grant and Sierra.	Silver City.....	Do.
Do.....	A. A. Sedillo, county of Socorro.	Socorro.....	Do.
Fourth district (counties of San Miguel, Mora, Colfax, and Union):			
Judge.....	W. J. Mills.....	Las Vegas.....	
Clerk.....	Secundino Romero.....	do.....	
District attorney.....	S. B. Davis, jr., counties of San Miguel and Mora.	do.....	Do.
Do.....	J. Leahy, counties of Colfax and Union.	Raton.....	Do.
Fifth district (counties of Chaves, Eddy, and Roosevelt):			
Judge.....	W. H. Pope.....	Roswell.....	
Clerk.....	W. E. Martin.....	do.....	
District attorney.....	J. M. Hervey.....	do.....	Do.
Sixth district (counties of Otero, Lincoln, Torrance, Leonard Wood, and Quay):			
Judge.....	E. A. Mann.....	Alamogordo.....	
Clerk.....	D. J. Leahy.....	do.....	
District attorney.....	W. H. H. Llewellyn, counties of Lincoln and Otero.	Las Cruces.....	Do.
Do.....	S. B. Davis, jr., counties of Leonard Wood and Quay.	Las Vegas.....	Do.
Do.....	F. W. Clancy, county of Torrance.	Albuquerque.....	Do.

<sup>a</sup> Deceased. Succeeded by George W. Prichard.<sup>b</sup> Assassinated. Succeeded by Amado Chaves.



*Official register—Continued.*

## FEDERAL OFFICERS

Office.	Name.	Address.	Term expires.
Delegate in Congress.....	B. S. Rodey <i>a</i> .....	Albuquerque.....	Mar. 4, 1905
Surveyor-general.....	M. O. Llewellyn.....	Santa Fe.....	Jan. 29, 1906
Collector internal revenue.....	A. L. Morrison.....	do.....	Not specified.
United States attorney.....	W. B. Childers.....	Albuquerque.....	Feb. 13, 1905
Assistant United States attorney.....	W. C. Reid.....	Las Vegas.....	Mar. 13, 1905
Do.....	E. L. Medler.....	Albuquerque.....	July 18, 1906
United States marshal.....	C. M. Foraker.....	do.....	June 1, 1906
Chief deputy marshal.....	G. A. Kaseman.....	do.....	Do.
Register land office.....	M. R. Otero.....	Santa Fe.....	Jan. 29, 1906
Receiver land office.....	Fred. Muller.....	do.....	Dec. 12, 1905
Register land office.....	N. Galles.....	Las Cruces.....	Jan. 29, 1906
Receiver land office.....	H. D. Bowman.....	do.....	Do.
Register land office.....	Howard Leland.....	Roswell.....	Do.
Receiver land office.....	D. L. Guyer.....	do.....	Feb. 23, 1907
Register land office.....	E. W. Fox.....	Clayton.....	Jan. 12, 1906
Receiver land office.....	A. W. Thompson.....	do.....	Do.
Jicarilla Indian agent.....	H. H. Johnson.....	Dulce.....	Civil service.
Navaho Indian agent.....	G. W. Hayzlett.....	Gallup.....	Do.
Mescalero Indian agent.....	J. S. Carroll.....	Mescalero.....	Do.
Superintendent Government Indian school.....	C. J. Crandall.....	Santa Fe.....	Do.
Do.....	Jas. K. Allen.....	Albuquerque.....	Do.
Supervising teacher Pueblo day schools.....	Miss M. E. Disette.....	Santa Fe.....	Do.
Attorney for Pueblo Indians.....	A. J. Abbott.....	do.....	Not specified.
United States mine inspector.....	Jo. E. Sheridan.....	Silver City.....	Do.

TABLE I.—*Corporation filings for fiscal years 1903 and 1904.*

Foreign.	1903.		1904.	
	Number.	Authorized capital.	Number.	Authorized capital.
Foreign:				
Arizona.....			9	\$10,500,000
California.....	3	\$40,000	1	25,000
Colorado.....	8	3,260,000	6	5,955,000
Connecticut.....			1	100,000
Delaware.....	1	1,000,000	1	200,000
Iowa.....	1	42,000		
Kansas.....			1	200,000
Maine.....			1	500,000
Maryland.....	1	4,000,000		
Michigan.....			1	50,000
Missouri.....	3	204,000	1	500,000
New Jersey.....	1	8,000,000	3	2,550,000
New York.....	1	1,400,000	1	500,000
Ohio.....			1	500,000
South Dakota.....	4	6,500,000	2	11,000,000
Texas.....	2	165,000	1	75,000
West Virginia.....	1	3,000,000		
Wisconsin.....	2	2,000,000		
Wyoming.....	1	1,000,000	1	500,000
Total.....	29	30,611,000	31	33,155,000
Domestic.....	171	69,918,541	153	71,017,900
Grand total.....	200	100,529,541	184	104,172,900

*a* Will be succeeded on March 4, 1905, by William H. Andrews.

TABLE II.—*Character of corporation charters issued for the fiscal years 1903 and 1904.*

Character.	1903.			1904.		
	Num-ber.	Capital.	Mile-age.	Num-ber.	Capital.	Mile-age.
Banks and building and loan associations.....	4	\$6,240,000	-----	4	\$1,750,000	-----
Benevolent and charitable institutions.....	9	-----	-----	14	12,000	-----
Irrigation and improvement companies.....	7	1,500,000	-----	13	4,238,000	-----
Manufacturing and other industrial pursuits.....	104	18,079,541	-----	70	8,918,200	-----
Mining, milling, and smelting companies.....	70	59,435,000	-----	79	83,824,700	-----
Railway companies.....	6	15,275,000	698	4	5,430,000	84
Total .....	200	100,529,541	698	184	104,172,900	84

<sup>a</sup> \$3,500,000 of this capitalization represented by increase of capital stock without corresponding increase in mileage.

TABLE III.—*Incorporation fees paid Territorial treasurer for fiscal years 1903 and 1904.*

	1903.	1904.
First quarter.....	\$3,071.75	\$2,375.00
Second quarter.....	3,608.75	2,510.00
Third quarter.....	5,168.00	4,935.00
Fourth quarter.....	1,780.00	1,760.00
Total .....	13,628.50	11,580.00

## TREASURER OF THE TERRITORY OF NEW MEXICO.

[J. H. VAUGHN, *Treasurer.*]

During the year ending June 1, 1904, the Territorial debt has been decreased \$35,400, certificates of indebtedness paid. The issue of \$101,800 of 5 per cent casual deficit bonds was called for payment on May 1, 1904, interest on the bonds ceasing on that date. Funds to pay off the entire issue (derived from the sale of \$101,000 general refunding 4s, sold at par and interest) are on deposit with the National Bank of Commerce in New York City. Up to the date of this report none of these bonds had been returned to this office by the paying bank in New York, but a greater part of this issue has since been paid and canceled on the books in the treasurer's office. The total bonded indebtedness of the Territory (June 1, 1904) is \$1,062,000, exclusive of bonds called for redemption, and on this same date there were balances to the credit of sinking funds available to redeem outstanding bonds \$191,956.35, leaving the net Territorial debt on June 1, 1904, \$870,043.65. The revenues derived from the 6-mill tax, levied for Territorial purposes, has been ample to meet all current expenses provided for under the appropriations, and the general financial condition and credit of the Territory was never better.

*Payments by counties of Territorial tax for year ending June 1, 1904.*

County.	Fifty-fourth fiscal year.		Fifty-fifth fiscal year.		Total payments.
	Third quarter.	Fourth quarter.	First quarter.	Second quarter.	
Bernalillo.....	\$16,643.02	\$1,577.91	\$21,049.40	\$805.02	\$40,075.35
Chaves.....	14,977.27	336.27	21,253.49	979.71	37,546.74
Colfax.....	14,847.42	1,439.28	21,191.75	1,147.05	38,625.50
Dona Ana.....	8,541.19	991.52	12,550.98	1,475.64	23,559.33
Eddy.....	10,757.59	1,402.83	13,144.44	667.41	25,972.27
Grant.....	14,749.76	1,063.92	20,515.46	746.64	37,075.78
Leonard Wood.....	2,068.71	399.80	3,592.09	484.54	6,545.14
Lincoln.....	6,466.11	383.84	7,605.13	304.72	14,759.80
Luna.....	8,039.03	399.48	10,093.93	798.83	19,331.27
Mora.....	3,985.49	894.86	5,761.96	341.60	10,983.91
McKinley.....	4,737.66	96.07	6,521.11	69.06	11,423.90
Otero.....	6,632.18	1,229.91	8,996.51	629.37	17,487.97
Quay.....	128.80	244.75	3,326.92	392.75	4,093.22
Rio Arriba.....	2,764.16	210.34	4,774.14	1,908.06	9,656.70
Roosevelt.....	1,816.20	569.91	4,165.76	148.66	6,700.53
San Juan.....	1,795.83	535.14	3,435.07	1,050.04	6,816.08
Santa Fe.....	6,056.07	1,194.86	8,982.97	1,050.91	17,284.81
San Miguel.....	17,384.12	1,084.04	21,085.98	1,217.93	40,772.07
Sierra.....	7,349.68	382.54	9,409.18	665.49	17,806.89
Socorro.....	8,486.86	1,017.74	14,763.25	765.90	25,033.75
Sandoval.....	340.80	88.26	3,889.93	91.50	4,410.49
Taos.....	2,348.70	345.48	4,083.84	235.05	7,013.07
Union.....	6,446.54	1,845.20	11,832.99	1,333.16	21,517.89
Valencia.....	6,891.38	37.89	8,328.60	565.67	15,823.54
Total.....	174,254.57	17,771.84	250,354.88	17,934.71	460,316.00

*Receipts from sources other than taxation for year ending June 1, 1904.*

Source from which received.	Fifty-fourth fiscal year.		Fifty-fifth fiscal year.		Total receipts.
	Third quarter.	Fourth quarter.	First quarter.	Second quarter.	
Sale of compiled laws.....	\$76.50	\$76.50	\$68.00	\$102.00	\$323.00
J. H. Vaughn, Territorial treasurer, interest on deposits.....	1,846.44	1,972.23	1,935.01	2,080.67	7,834.35
H. O. Bursum, superintendent of penitentiary, convicts' earnings.....	3,205.83	3,801.00	6,176.80	5,956.75	19,140.38
J. W. Reynolds, Territorial secretary, fees from office.....	1,780.00	2,375.00	2,510.00	4,935.00	11,600.00
J. A. La Rue, secretary cattle sanitary board.....	1,000.00	3,500.00	-----	4,000.00	8,500.00
Southwestern and International Express Company.....	126.58	-----	-----	-----	126.58
W. G. Sargent, Territorial auditor.....	7,448.61	-----	-----	-----	74,448.61
Clerks of the district courts.....	2,331.70	2,351.80	3,212.95	2,838.60	10,735.05
Pullman Car Company.....	-----	-----	-----	410.75	410.75
J. H. Vaughn, Territorial treasurer, on account of loan, Louisiana Purchase Exposition.....	-----	-----	-----	10,500.00	10,500.00
Sale of general refunding bonds.....	-----	-----	-----	101,000.00	101,000.00
Interest fund.....	-----	-----	-----	415.22	415.22
Interest on deposits.....	-----	-----	-----	800.00	800.00
A. A. Keen, commissioner of public lands.....	26,802.97	40,940.38	17,449.07	18,620.99	103,813.41
United States annual appropriation for agricultural college <sup>a</sup> .....	25,000.00	-----	-----	-----	25,000.00
Total.....	69,618.63	55,016.91	31,351.83	151,659.98	307,647.35

## RECAPITULATION.

From counties' tax levy.....	\$174,254.57	\$17,771.84	\$250,354.88	\$17,934.71	\$460,316.00
Sources other than taxation.....	69,618.63	55,016.91	31,351.83	151,659.98	307,647.35
Total.....	243,873.20	72,788.75	281,706.71	169,594.69	767,963.35

<sup>a</sup>Transmitted by Treasurer of the United States through Territorial treasurer to college, and not being Territorial funds not reported to auditor.



*Quarterly statement of the Territorial treasurer of New Mexico, third quarter of the fifty-fourth fiscal year, commencing June 1, 1903, and ending August 31, 1903.*

Fund or account.	Balances May 31, 1903.	Receipts during quarter.	Transfers to funds.	Transfers from funds.	Payments during quarter.	Balances Aug. 31, 1903.
Interest fund	\$22,688.10		\$24,919.80		\$17,977.50	\$29,630.40
School fund	725.00					725.00
Interest on deposits	1,300.62	\$1,846.44		\$1,400.00	313.91	1,433.15
Interest and sinking fund, certificates of indebted- ness	3,651.27	11,518.06	4.53		2,903.00	12,270.86
University of New Mexico	549.33		6,346.32		6,418.22	477.42
Deficiency fund	249.69		2,884.69		2,917.37	217.01
Agricultural college	156.23		2,307.76		1,068.01	1,385.98
Income fund	33.19				33.19	
Permanent fund		4,062.72				4,062.72
Reform school:						
Income fund	253.87	150.03			48.00	357.90
Permanent fund	7,081.00					7,081.00
Blind asylum:						
Income fund	312.90	150.06			42.35	420.61
Permanent fund	5,406.30	2,177.28				7,583.58
New Mexico School of Mines	329.59		3,807.80		1,834.03	2,303.36
Income fund	225.27	142.80			225.27	142.80
Deaf and dumb asylum	72.80				72.80	
Income fund	385.43	150.00			535.43	
Permanent fund	2,646.60				2,646.60	
Miners' hospital:						
Income fund	287.69	150.03				437.72
Permanent fund		9,066.62				9,066.62
New Mexico Insane Asylum	998.79		24,998.83			25,997.62
Income fund		157.74	30.80			188.54
Permanent fund	30.80			30.80		
Penitentiary:						
Income fund	8.64	150.72			33.50	125.41
Current-expense fund	1,579.68		4,178.02		2,679.96	3,077.74
Maintenance fund	663.06		11,681.39		11,673.26	671.19
Convicts' earnings fund	418.63	3,205.83			1,958.90	1,665.56
Permanent fund	1,014.03	1,920.00			2,504.72	429.31
New Mexico Military Insti- tute	273.39		4,088.59			4,311.98
Income fund	256.13	150.00			256.13	150.00
Water reservoir perma- nent fund	60.00					60.00
Compilation fund	51.00	76.50				127.50
Normal school, Silver City	826.05		3,632.42		1,122.39	3,396.08
Income fund	258.84	150.00				408.84
Permanent fund	4,766.60				4,766.60	
Normal school, Las Vegas	499.39		5,769.39		2,778.84	3,489.94
Income fund		150.00				150.00
Normal university, Las Ve- gas, permanent fund	4,566.60					4,566.60
Special purposes	4,614.48	2,885.65	1.13		2,819.17	4,682.09
Legal expense fund	192.60					192.60
Special tax fund, fiftieth fiscal year	7.97					7.97
Common school, income	4,392.63	1,409.80			4,411.58	1,390.85
Proceeds 5 per cent United States land sales, perma- nent	6,742.21					6,742.21
Charitable institutions	3,962.00	6,823.24	2.65		5,354.22	5,433.67
Deficit fund	154.60					154.60
Sheep sanitary fund	191.87	899.12				1,090.99
Cattle indemnity fund	1,168.29	5,708.47			5,710.19	1,166.57
Compensation of assessors	2,198.73	7,267.88			7,154.03	2,312.58
Salary fund	18,240.19	2,331.70	17,366.05		13,341.38	24,596.56
Supreme court fund	709.15		154.63		60.02	803.76
Miscellaneous fund	12,675.79		9,023.72		9,128.93	12,579.58
Militia fund	858.29		817.16		554.34	1,121.11
Capitol:						
Contingent expense fund	228.05		2,784.15		1,684.13	1,328.07
Contingent bond sink- ing fund	13.37					13.37
Maintenance fund, spe- cial	3,766.26				1,496.25	2,270.01
Capitol building bonds sinking fund	110,613.28	17,327.42	6.79			127,947.49
Provisional indebtedness sinking fund	23,976.75	5,811.78	2.26			29,790.79
Geological survey	10,572.92	2,885.96	1.13	13,460.01		
Louisiana Purchase Expo- sition fund	149.32	4,630.27	1.81	2,551.39	1,500.00	730.01
Scenic Route			1,400.00		1,282.12	117.88
United States land com- mission	6,787.03				1,519.56	5,267.47

*Quarterly statement of the Territorial treasurer of New Mexico, third quarter of the fifty-fourth fiscal year, etc.—Continued.*

Fund or account.	Balances May 31, 1903.	Receipts during quarter.	Transfers to funds.	Transfers from funds.	Payments during quarter.	Balances Aug. 31, 1903.
Maintenance board of public lands	\$3,479.75	-----	-----	-----	\$1,248.72	\$2,231.03
The Palace income fund	1,317.34	\$239.00	-----	-----	1.65	1,554.69
Temporary provisional indebtedness fund	2,876.43	2,448.61	\$2,551.39	-----	5,000.00	2,876.43
Annual United States appropriation agricultural college	-----	25,000.00	-----	-----	25,000.00	-----
Southwestern and International Express Co.	-----	126.58	-----	\$63.29	-----	63.29
Territorial purposes, fifty-fourth fiscal year	-----	70,906.77	27.15	70,933.92	-----	-----
Territorial institutions, fifty-fourth fiscal year	-----	45,369.95	15.84	40,385.79	5,000.00	-----
Military institute, permanent	-----	6,426.62	-----	-----	2,880.00	3,546.62
Total	282,517.80	243,873.20	128,825.20	128,825.20	159,956.27	366,434.73

RECAPITULATION.

Balances March 31, 1903	\$282,517.80
Receipts during quarter	243,873.20
Total to be accounted for	526,391.00
Payments during quarter	159,956.27
Balance September 1, 1903	366,434.73

DISPOSITION OF FUNDS.

First National Bank of Santa Fe	\$80,271.54
Bank of Commerce, Albuquerque	28,216.21
First National Bank of Las Vegas	30,231.71
First National Bank of Albuquerque	30,225.37
San Miguel National Bank, Las Vegas	30,226.25
First National Bank of Raton	30,000.00
First National Bank of Roswell	15,113.36
National Bank of Commerce of New York	17,055.91
Citizens' Bank, Roswell	20,038.38
First National Bank, Clayton	20,000.00
First National Bank, Carlsbad	20,151.23
Silver City National Bank	20,150.97
Taos County Bank, Taos	<sup>a</sup> 3,818.90
New Mexico Savings Bank and Trust Company, Albuquerque	<sup>a</sup> 781.19
Citizens' National Bank of Raton	20,153.71
Total	366,434.73

<sup>a</sup> Funds not available.

*Quarterly statement of the Territorial treasurer of New Mexico, fourth quarter of the fifty-fourth fiscal year, commencing September 1, 1903, and ending November 30, 1903.*

Fund or account.	Balances Aug. 31, 1903.	Receipts during quarter.	Transfers to funds.	Transfers from funds.	Payments during quarter.	Balances Nov. 30, 1903.
Interest fund	\$29,630.40	-----	\$2,361.99	-----	\$14,257.50	\$17,734.89
School fund	725.00	-----	-----	-----	-----	725.00
Interest on deposits	1,433.15	\$1,972.23	-----	\$2,078.89	291.35	1,035.14
Interest and sinking fund, certificates of indebtedness	12,270.86	1,127.42	-----	-----	7,414.00	5,984.28
University of New Mexico	477.42	-----	484.90	-----	800.95	161.37
Deficiency fund	217.01	-----	220.41	-----	364.07	73.35
Agricultural college	1,305.98	-----	176.32	-----	1,397.19	175.11
Income fund	-----	46.34	-----	-----	-----	46.34
Permanent fund	4,062.72	4,050.60	-----	2,000.00	-----	6,113.32
Reform school	-----	-----	-----	-----	-----	-----
Income fund	357.90	175.68	-----	-----	-----	533.58
Permanent fund	7,081.00	5,294.07	-----	-----	-----	12,375.07
Blind asylum	-----	-----	-----	-----	-----	-----
Income fund	420.61	252.93	-----	-----	500.00	173.54
Permanent fund	7,583.58	1,813.02	-----	-----	-----	9,396.60
New Mexico School of Mines	2,303.36	-----	230.94	-----	2,303.36	230.94
Income fund	142.80	252.83	-----	-----	143.44	252.19
Permanent fund	-----	2,400.00	-----	-----	480.00	1,920.00

*Quarterly statement of the Territorial treasurer of New Mexico, fourth quarter of the fifty-fourth fiscal year, etc.—Continued.*

Fund or account.	Balances Aug. 31, 1903.	Receipts during quarter.	Transfers to funds.	Transfers from funds.	Payments during quarter.	Balances Nov. 30, 1903.
Deaf and dumb asylum:						
Income fund		\$252.34				\$252.34
Permanent fund		1,920.00				1,920.00
Miners' hospital:						
Income fund	\$437.72	222.09				659.81
Permanent fund	9,066.62	2,400.00		\$2,000.00	\$9,466.62	
New Mexico Insane Asylum	25,997.62		\$881.66		23,711.64	3,167.64
Income fund	188.54	154.63				343.17
Permanent fund		1,443.87				1,443.87
Penitentiary:						
Income fund	125.41	227.33			192.92	159.82
Current expense fund	3,077.74		396.01		2,679.96	793.79
Maintenance fund	671.19		1,107.20		916.47	861.92
Convicts' earnings fund	1,665.56	3,801.00			4,723.22	743.34
Permanent fund	429.31	1,920.00			777.30	1,572.01
New Mexico Military Institute	4,311.98		308.58		4,008.16	612.40
Income fund	150.00	222.19			150.00	222.19
Permanent fund	3,546.62	4,560.90			3,546.62	4,560.90
Water reservoir permanent fund.	60.00					60.00
Compilation fund	127.50	76.50				204.00
Normal school, Silver City	3,396.08		282.13		3,330.03	348.18
Income fund	408.84	136.04				544.88
Normal school, Las Vegas	3,489.94		440.84		3,489.94	440.84
Income fund	150.00	136.03			192.77	93.26
Normal university, Las Vegas, permanent fund	4,566.60				4,566.60	
Special purposes	4,682.09	220.30			1,128.00	3,774.39
Legal expense fund	192.60					192.60
Special tax fund, fiftieth fiscal year	7.97					7.97
Common school income	1,390.85	12,024.30			1,488.05	11,927.10
Proceeds 5 per cent United States land sales, permanent	6,742.21					6,742.21
Charitable institutions	5,453.67	722.53			2,682.12	3,474.08
Deficit fund	154.60					154.60
Sheep sanitary fund	1,090.99	251.00			1,159.38	202.61
Cattle indemnity fund	1,166.57	4,112.03			4,112.33	1,166.27
Compensation of assessors	2,312.58	748.86			996.54	2,064.90
Salary fund	24,596.56	2,351.80	1,646.01		16,317.48	12,276.89
Supreme court fund	803.76		14.65		56.50	761.91
Miscellaneous fund	12,579.58		856.16		3,432.12	10,003.62
Militia fund	1,121.11		77.46		496.75	701.82
Capitol:						
Contingent expense fund	1,328.07		1,242.78		2,263.35	307.50
Contingent bond sinking fund	13.37					13.37
Maintenance fund, special	2,270.01				1,884.04	385.97
Capitol building bond sinking fund	127,947.49	1,695.74				129,643.23
Provisional indebtedness sinking fund	29,790.79	569.06				30,359.85
Geological survey		220.73				220.73
Louisiana Purchase Exposition fund	730.01	353.92				1,083.93
Fifty-fifth fiscal year		149.66				149.66
Scenic route	117.88		1,100.00		1,189.45	28.43
United States Land Commission	5,267.47				1,872.78	3,394.69
Maintenance board of public lands	2,231.03		4,000.00		970.50	5,260.53
The Palace income fund	1,554.69	209.00			100.00	1,663.69
Temporary provisional indebtedness fund	2,876.43					2,876.43
Southwestern and International Express Co	63.29					63.29
Territorial purposes:						
Fifty-fourth fiscal year		7,656.70		6,723.37	933.33	
Fifty-fifth fiscal year		1,485.91				1,485.91
Territorial institutions:						
Fifty-fourth fiscal year		3,085.78		3,085.78		
Fifty-fifth fiscal year		1,247.20				1,247.20
Improvement Rio Grande income		826.19				826.19
Total	366,434.73	72,788.75	15,888.04	15,888.04	130,766.83	308,456.65



*Quarterly statement of the Territorial treasurer of New Mexico, fourth quarter of the fifty-fourth fiscal year, etc.—Continued.*

RECAPITULATION.

Balances August 1, 1903.....	\$366,434.73
Receipts during quarter.....	72,788.75
Total to be accounted for.....	439,223.48
Payments during quarter.....	130,766.83
Balance November 30, 1903.....	308,456.65

DISPOSITION OF FUNDS.

First National Bank of Santa Fe.....	\$28,519.16
Bank of Commerce, Albuquerque.....	28,433.08
First National Bank of Las Vegas.....	30,463.81
First National Bank of Albuquerque.....	30,452.41
San Miguel National Bank, Las Vegas.....	30,453.25
First National Bank of Raton.....	30,204.70
First National Bank of Roswell.....	15,226.99
National Bank of Commerce of New York.....	8,857.98
Citizens National Bank of Roswell.....	20,181.35
First National Bank, Clayton.....	20,150.00
First National Bank, Carlsbad.....	20,302.75
Silver City National Bank.....	20,302.48
Taos County Bank, Taos.....	23,818.90
New Mexico Savings Bank and Trust Company, Albuquerque.....	781.19
Citizens National Bank of Raton.....	20,308.60
Total.....	308,456.65

a Funds not available.

*Quarterly statement of the Territorial treasurer of New Mexico, first quarter of the fifty-fifth fiscal year, commencing December 1, 1903, and ending February 29, 1904.*

Fund or account.	Balances Nov. 30, 1903.	Receipts during quarter.	Transfers to funds.	Transfers from funds.	Payments during quarter.	Balances Feb. 29, 1904.
Interest fund.....	\$17,734.89		\$30,632.69		\$15,255.00	\$33,112.58
School fund.....	725.00					725.00
Interest on deposits.....	1,035.14	\$1,935.01		\$2,500.00		470.15
Interest and sinking fund, certificate of indebted- ness.....	5,984.28	14,889.94			1,060.00	19,844.22
University of New Mexico.....	161.37		9,800.77		9,331.78	630.36
Deficiency fund.....	73.35		141.11		191.41	23.05
Agricultural college.....	175.11		5,953.09		5,753.05	375.15
Income fund.....	46.34	103.38			149.72	
Permanent fund.....	6,113.32	480.75				6,594.07
Reform school fund.....			1,460.05			1,460.05
Income fund.....	533.58	50.00				583.58
Permanent fund.....	12,375.07	480.00				12,855.07
Blind asylum fund.....			1,460.06		603.40	856.66
Income fund.....	173.54					173.54
Permanent fund.....	9,396.60				9,396.60	
New Mexico School of Mines.....	290.94		6,756.49		4,132.56	2,914.87
Income fund.....	252.19	183.59			252.19	183.59
Permanent fund.....	1,920.00				1,920.00	
Deaf and dumb asylum.....			1,460.06			1,460.06
Income fund.....	252.34	72.40				324.74
Permanent fund.....	1,920.00					1,920.00
Miners' hospital fund.....			1,460.05			1,460.05
Income fund.....	659.81	33.00				692.81
New Mexico Insane Asylum.....	3,167.64		22,465.16		3,167.64	22,465.16
Income fund.....	343.17	98.75			375.17	66.75
Permanent fund.....	1,443.87					1,443.87
Penitentiary:						
Income fund.....	159.82					159.82
Current expense fund.....	793.79		6,512.13		2,990.43	4,315.49
Maintenance fund.....	861.92		14,822.54		14,376.90	1,307.56
Convicts earnings fund.....	743.34	6,176.80			6,344.00	576.14
Permanent fund.....	1,572.01				1,565.70	6.31
New Mexico Military Insti- tute.....	612.40		6,767.78		4,460.14	2,920.04
Income fund.....	222.19					222.19
Permanent fund.....	4,560.90					4,560.90

*Quarterly statement of the Territorial treasurer of New Mexico, first quarter of the fifty-fifth fiscal year, etc.—Continued.*

Fund or account.	Balances Nov. 30, 1903.	Receipts during quarter.	Transfers to funds.	Transfers from funds.	Payments during quarter.	Balances Feb. 29, 1904.
Water reservoir, permanent fund	\$60.00					\$60.00
Compilation fund	204.00	\$68.00				272.00
Normal school, Silver City	348.18		\$7,480.87		\$4,343.19	3,485.86
Income fund	544.88	50.00				594.88
Normal school, Las Vegas	440.84		7,582.46		4,750.06	3,273.24
Income fund	93.26	50.00			143.26	
Special purposes	3,774.39	141.45			326.00	3,589.84
Legal expense fund	192.60					192.60
Special tax fund, fiftieth fiscal year	7.97					7.97
Common school income	11,927.10	10,375.49			16,292.29	6,010.30
Proceeds 5 per cent United States land sales, permanent	6,742.21	5,133.71				11,875.92
Charitable institutions	3,474.08	11,966.43			5,759.90	9,680.61
Deficit fund	154.60					154.60
Sheep sanitary fund	202.61	4,024.37			2,686.38	1,540.60
Cattle indemnity fund	1,166.27	5,655.78			5,011.88	1,810.17
Compensation of assessors	2,064.90	10,438.33			10,155.46	2,347.77
Salary fund	12,276.89	3,212.95	27,115.82		14,041.03	28,564.63
Supreme court fund	761.91		197.34		263.69	695.56
Miscellaneous fund	10,003.62		9,042.31		5,277.46	13,768.47
Militia fund	701.82		617.95		292.99	1,026.78
Capitol contingent expense fund	307.50		3,705.86		1,530.45	2,482.91
Contingent bond sinking fund	13.37					13.37
Maintenance fund, special	385.97				385.97	
Building bonds sinking fund	129,643.23	22,323.73				151,966.96
Provisional indebtedness sinking fund	30,359.85	7,443.28				37,803.13
Geological survey	220.73	141.59				362.32
Louisiana Purchase Exposition fund:						
Fifty-fourth fiscal year	1,083.93	226.24				1,310.17
Fifty-fifth fiscal year	149.66	8,595.47			8,200.00	545.13
Scenic route	28.43		2,500.00		1,382.84	1,145.59
United States Land Commission	3,394.69				1,168.36	2,226.33
Maintenance board of public lands	5,260.53				647.95	4,612.58
The Palace income fund	1,663.69	338.00			1,792.53	209.16
Temporary provisional indebtedness fund	2,876.43				2,876.43	
Southwestern and International Express Co.	63.29					63.29
Territorial purposes:						
Fifty-fourth fiscal year		3,394.83		\$3,394.83		
Fifty-fifth fiscal year	1,485.91	88,432.57	3,394.83	92,646.64	666.67	
Territorial institutions:						
Fifty-fourth fiscal year		1,975.54		1,975.54		
Fifty-fifth fiscal year	1,247.20	73,215.33		74,462.53		
Improvement Rio Grande, income	826.19				220.60	605.59
Orphan Children's Home, Belen			3,650.12			3,650.12
Total	308,456.65	281,706.71	174,979.54	174,979.54	169,511.08	420,652.28

## RECAPITULATION.

Balances November 30, 1903	\$308,456.65
Receipts during quarter	281,706.71
Total to be accounted for	590,163.36
Payments during quarter	169,511.08
Balance February 29, 1904	420,652.28

*Quarterly statement of the Territorial treasurer of New Mexico, first quarter of the fifty-fifth fiscal year, etc.—Continued.*

## DISPOSITION OF FUNDS.

First National Bank of Santa Fe.....	\$130,576.82
Bank of Commerce, Albuquerque.....	28,651.61
First National Bank of Las Vegas.....	30,697.84
First National Bank of Albuquerque.....	30,604.86
San Miguel National Bank, Las Vegas.....	30,682.00
First National Bank of Raton.....	30,431.80
First National Bank of Roswell.....	15,341.47
National Bank of Commerce of New York.....	17,060.94
Citizens' National Bank of Roswell.....	20,333.05
First National Bank, Clayton.....	20,300.00
First National Bank, Carlsbad.....	20,455.41
Silver City National Bank.....	20,455.11
Taos County Bank, Taos, N. Mex.....	23,818.90
New Mexico Savings Bank and Trust Company, Albuquerque.....	2781.19
Citizens' National Bank of Raton.....	20,461.28
Total.....	420,652.28

*Quarterly statement of the Territorial treasurer of New Mexico, second quarter of the fifty-fifth fiscal year, commencing March 1, 1904, and ending May 31, 1904.*

Fund or account.	Balances Feb. 29, 1904.	Receipts during quarter.	Transfers to funds.	Transfers from funds.	Payments during quarter.	Balances May 31, 1904.
Interest fund.....	\$33,112.58	\$415.22	\$3,708.87		\$14,157.50	\$23,079.17
School fund.....	725.00					725.00
Interest on deposits.....	470.15	2,080.67			852.50	1,698.32
Interest and sinking fund, certificates of indebted- ness.....	19,844.22	1,080.05	4,713.24		25,544.00	93.51
University of New Mexico.....	630.36		600.17			1,290.53
Deficiency fund.....	23.05		52.11			75.16
Agricultural college.....	375.15		377.40			752.55
Income fund.....		215.04				215.04
Permanent fund.....	6,594.07	4,420.00			11,014.07	
Reform school fund.....	1,460.05		83.93		1,000.00	543.98
Income fund.....	583.58	48.00				631.58
Permanent fund.....	12,855.07					12,855.07
Blind asylum fund.....	856.66		83.92			940.58
Income fund.....	173.54	104.30				277.84
Permanent fund.....		2,133.38				2,133.38
New Mexico School of Mines.....	2,914.87		446.46		296.96	3,064.37
Income fund.....	183.59	54.75				238.34
Permanent fund.....		960.00		\$960.00		
Deaf and dumb asylum.....	1,460.06		83.92		1,460.06	83.92
Income fund.....	324.74	54.75			324.74	54.75
Permanent fund.....	1,920.00	960.00		960.00	1,920.00	
Miners' hospital fund.....	1,460.05		83.93			1,543.98
Income fund.....	692.81	100.86				793.67
Permanent fund.....		1,880.00				1,880.00
New Mexico Insane Asylum.....	22,465.16		1,467.34		22,465.16	1,467.34
Income fund.....	66.75				66.75	
Permanent fund.....	1,443.87			1,000.00		443.87
Penitentiary:						
Income fund.....	159.82	48.19			75.97	132.04
Current expense fund.....	4,315.49		788.46		3,294.96	1,808.99
Maintenance fund.....	1,307.56		1,794.65		1,670.61	1,431.60
Convicts' earnings fund.....	576.14	5,956.75			2,868.54	3,664.35
Permanent fund.....	6.31	960.00			953.98	12.33
New Mexico Military Insti- tute.....	2,920.04		450.62		3,225.32	145.34
Income fund.....	222.19	71.36				293.55
Permanent fund.....	4,560.90	1,440.00		2,000.00		4,000.90
Water reservoir perma- nent fund.....	60.00					60.00
Compilation fund.....	272.00	102.00				374.00
Normal school, Silver City.....	3,485.86		486.33		2,775.09	1,197.10
Income fund.....	594.88	64.87				659.75
Permanent.....		1,140.00				1,140.00
Normal school, Las Vegas.....	3,273.24		523.86		3,462.29	354.81
Income fund.....		64.88				64.88
Normal university, Las Vegas, permanent.....		1,140.00		1,000.00		140.00
Special purposes.....	3,589.84	55.12			456.00	3,188.96
Legal expense fund.....	192.60					192.60
Special tax fund, fifty-fifth fis- cal year.....	7.97					7.97
Common school income.....	6,010.30	1,808.32		571.45	50.00	7,197.17
Proceeds 5 per cent United States land sales, perma- nent.....	11,875.92					11,875.92

a Funds not available.



*Quarterly statement of the Territorial treasurer of New Mexico, second quarter of the fifty-fifth fiscal year, etc.—Continued.*

Fund or account.	Balances Feb. 29, 1904.	Receipts during quarter.	Transfers to funds.	Transfers from funds.	Payments during quarter.	Balances May 31, 1904.
Charitable institutions .....	\$9,680.61	\$825.82	\$10.73	-----	\$5,114.53	\$5,402.63
Deficit fund .....	154.60	-----	-----	-----	-----	154.60
Sheep sanitary fund .....	1,540.60	350.75	-----	-----	-----	1,891.35
Cattle indemnity fund .....	1,810.17	4,420.21	-----	-----	5,085.64	1,144.74
Compensation of assessors .....	2,347.77	747.74	-----	-----	1,173.92	1,921.59
Salary fund .....	28,564.63	2,838.60	3,283.04	\$4,700.00	13,968.50	16,017.77
Supreme court fund .....	695.56	-----	23.89	-----	118.69	600.76
Miscellaneous fund .....	13,768.47	-----	1,094.80	-----	6,040.67	8,822.60
Militia fund .....	1,026.78	-----	74.82	-----	387.16	714.44
Capitol:						
Contingent expense fund .....	2,482.91	-----	448.69	-----	1,935.30	996.30
Contingent bond sinking fund .....	13.37	-----	-----	-----	-----	13.37
Capitol building bonds sinking fund .....	151,966.96	1,619.70	19.86	-----	-----	153,606.52
Casual deficit bonds .....	-----	101,800.00	-----	-----	-----	101,800.00
Provisional indebtedness sinking fund .....	37,803.13	540.08	6.62	-----	-----	38,349.83
Geological survey .....	362.32	55.12	-----	-----	-----	417.44
Louisiana Purchase Exposition fund:						
Fifty-fourth fiscal year .....	1,310.17	88.12	-----	-----	-----	1,398.29
Fifty-fifth fiscal year .....	545.13	11,015.94	7.95	-----	10,500.00	1,069.02
Scenic Route .....	1,145.59	-----	-----	-----	841.04	304.55
United States Land Commission .....	2,226.33	-----	6,500.00	-----	1,866.99	6,859.34
Maintenance board of public lands .....	4,612.58	-----	-----	-----	842.83	3,769.75
The Palace income fund .....	209.16	313.00	-----	-----	498.97	23.19
Southwestern and International Express Co. .....	63.29	-----	-----	-----	-----	63.29
Territorial purposes:						
Fifty-fourth fiscal year .....	-----	1,321.83	-----	1,250.54	-----	71.29
Fifty-fifth fiscal year .....	-----	10,091.62	1,329.98	11,217.22	-----	204.38
Territorial institutions:						
Fifty-fourth fiscal year .....	-----	771.21	-----	729.56	-----	41.65
Fifty-fifth fiscal year .....	-----	4,386.40	67.53	4,280.25	-----	173.68
Improvement Rio Grande income .....	605.59	-----	-----	8.55	519.86	77.18
Orphan Children's Home, Belen .....	3,650.12	-----	209.82	-----	3,719.13	140.81
Waterreservoir income for irrigation purposes .....	-----	439.29	-----	-----	-----	439.29
University of New Mexico income fund .....	-----	200.00	-----	-----	-----	200.00
Pullman car tax .....	-----	410.75	-----	205.37	205.38	-----
<b>Total .....</b>	<b>420,652.28</b>	<b>169,594.69</b>	<b>28,882.94</b>	<b>28,882.94</b>	<b>150,753.11</b>	<b>439,493.86</b>

## RECAPITULATION.

Balances February 29, 1904 .....	\$420,652.28
Receipts during quarter .....	169,594.69
Total to be accounted for .....	590,246.97
Payments during quarter .....	150,753.11
Balance May 31, 1904 .....	439,493.86

## DISPOSITION OF FUNDS.

National Bank of Commerce, New York, bond special .....	\$103,600.17
First National Bank of Santa Fe .....	49,737.60
Bank of Commerce, Albuquerque .....	28,864.64
First National Bank of Las Vegas .....	30,929.27
First National Bank of Albuquerque .....	30,911.87
San Miguel National Bank, Las Vegas .....	30,912.25
First National Bank of Raton .....	30,660.61
First National Bank of Roswell .....	15,456.81
National Bank of Commerce of New York .....	11,965.74
Citizens' National Bank of Roswell .....	20,480.00
First National Bank, Clayton .....	20,050.00
First National Bank, Carlsbad .....	20,100.76
Silver City National Bank .....	20,608.93
Taos County Bank, Taos, N. Mex .....	23,818.90
New Mexico Savings Bank and Trust Company, Albuquerque .....	2,781.19
Citizens' National Bank of Raton .....	20,615.12
<b>Total .....</b>	<b>439,493.86</b>

<sup>a</sup> Funds not available.

*Balances in hands of Treasurer June 1, 1903, receipts, transfers, and disbursements during the last half of fiscal year ending December 1, 1903, and first half of fiscal year 1904, and balances in Treasurer's hands June 1, 1904.*

Fund or account.	Balances June 1, 1903.	Receipts during year.	Transfers to funds.	Transfers from funds.	Payments during year.	Balances June 1, 1904.
Interest fund.....	\$22,688.10	\$415.22	\$61,623.35		\$61,647.50	\$23,079.17
School fund.....	725.00					725.00
Interest on deposits.....	1,300.62	7,834.35		\$5,978.89	1,457.76	1,698.32
Interest and sinking fund, certificates of indebted- ness.....	3,651.27	28,615.47	4,717.77		36,891.00	93.51
University of New Mexico.....	549.32		17,292.16		16,550.95	1,290.53
Deficiency fund.....	249.69		3,298.32		3,472.85	75.16
Income fund.....		200.00				200.00
Agricultural college.....	156.23		8,814.57		8,218.25	752.55
Income fund.....	33.19	364.76			182.91	215.04
Permanent fund.....		13,014.07		2,000.00	11,014.07	
Reform school.....			1,543.98		1,000.00	543.98
Income fund.....	255.87	423.71			48.00	631.58
Permanent fund.....	7,061.00	5,774.07				12,855.07
Blind asylum fund.....			1,543.98		603.40	940.58
Income fund.....	312.90	507.29			542.35	277.84
Permanent fund.....	5,406.30	6,123.68			9,396.60	2,133.38
School of mines fund.....	329.59		11,301.69		8,566.91	3,064.37
Income fund.....	225.27	633.97			620.90	238.34
Permanent fund.....		3,360.00		960.00	2,400.00	
Deaf and dumb asylum fund.....	72.80		1,543.98		1,532.86	83.92
Income fund.....	385.43	529.49			860.17	54.75
Permanent fund.....	2,646.60	2,880.00		960.00	4,566.60	
Miners' hospital fund.....			1,543.98			1,543.98
Income fund.....	287.69	505.98				793.67
Permanent fund.....		13,346.62		2,000.00	9,466.62	1,880.00
Insane asylum fund.....	998.79		49,812.99		49,344.44	1,467.34
Income fund.....		411.12	30.80		441.92	
Permanent fund.....	30.80	1,443.87		1,030.80		443.87
Penitentiary:						
Income fund.....	8.64	425.79			302.39	132.04
Current expense fund.....	1,579.68		11,874.62		11,645.31	1,808.99
Maintenance fund.....	603.06		29,405.78		28,637.24	1,431.60
Convicts' earnings fund.....	418.63	19,140.38			15,894.66	3,664.35
Permanent fund.....	1,014.03	4,800.00			5,801.70	12.33
Military institute fund.....	273.39		11,565.57		11,693.62	145.34
Income fund.....	256.13	443.55			406.13	293.55
Permanent fund.....		12,427.52		2,000.00	6,426.62	4,000.90
Water reservoir perma- nent fund.....	60.00					60.00
Compilation fund.....	51.00	323.00				374.00
Normal school, Silver City, fund.....	826.05		11,941.75		11,570.70	1,197.10
Income fund.....	258.84	400.91				659.75
Permanent fund.....	4,766.60	1,140.00			4,766.60	1,140.00
Normal school, Las Vegas, fund.....	499.39		14,316.55		14,481.13	334.81
Income fund.....		400.91			336.03	64.88
Permanent fund.....	4,566.60	1,140.00		1,000.00	4,566.60	140.00
Special purposes fund.....	4,614.48	3,302.52	1.13		4,729.17	3,188.96
Legal expense fund.....	192.60					192.60
Special tax fund, fiftieth fiscal year.....	7.97					7.97
Common school income fund.....	4,392.63	25,617.91		571.45	22,241.92	7,197.17
Proceeds 5 per cent United States land sales, perma- nent fund.....	6,742.21	5,133.71				11,875.92
Charitable institutions fund.....	3,962.00	20,338.02	13.38		18,910.77	5,402.63
Deficit fund.....	154.60					154.60
Sheep sanitary fund.....	191.87	5,525.24			3,825.76	1,891.35
Cattle indemnity fund.....	1,168.29	19,896.49			19,920.04	1,144.74
Compensation of assessors fund.....	2,198.73	19,202.81			19,479.95	1,921.59
Salary fund.....	18,240.19	10,735.05	49,410.92	4,700.00	57,668.30	16,017.77
Supreme court fund.....	709.15		380.51		498.90	600.76
Miscellaneous fund.....	12,675.79		20,025.99		2,3879.18	8,822.60
Militia fund.....	858.29		1,587.39		1,731.24	714.44
Capitol:						
Contingent expense fund.....	228.05		8,181.48		7,413.23	996.30
Contingent bond sink- ing fund.....	13.37					13.37
Maintenance fund, spe- cial.....	3,766.26				3,766.26	

*Balances in hands of Treasurer June 1, 1903, receipts, transfers, etc.—Cont'd.*

Fund or account.	Balances June 1, 1903.	Receipts during year.	Transfers to funds.	Transfers from funds.	Payments during year.	Balances June 1, 1904.
Capitol building bonds sinking fund	\$110,613.28	\$42,966.59	\$26.65	-----	-----	\$153,606.52
Casual deficit bonds fund	-----	101,800.00	-----	-----	-----	101,800.00
Provisional indebtedness sinking fund	23,976.75	14,364.20	8.88	-----	-----	38,349.83
Geological survey fund	10,572.92	3,303.40	1.13	\$13,460.01	-----	417.44
Louisiana Purchase Exposition fund:	-----	-----	-----	-----	-----	-----
Fifty-fourth fiscal year	149.32	5,298.55	1.81	2,551.39	\$1,500.00	1,398.29
Fifty-fifth fiscal year	-----	19,761.07	7.95	-----	18,700.00	1,069.02
Scenic Route fund	-----	-----	5,000.00	-----	4,695.45	304.55
United States Land Commission fund	6,787.03	-----	6,500.00	-----	6,427.69	6,859.34
Maintenance board, public lands fund	3,479.75	-----	4,000.00	-----	3,710.00	3,769.75
The Palace income fund	1,317.34	1,099.00	-----	-----	2,393.15	23.19
Temporary provisional indebtedness fund	2,876.43	2,448.61	2,551.39	-----	7,876.43	-----
Southwestern and International Express Co.	-----	126.58	-----	63.29	-----	63.29
Territorial purposes:	-----	-----	-----	-----	-----	-----
Fifty-fourth fiscal year	-----	83,280.13	27.15	82,302.66	933.33	71.29
Fifty-fifth fiscal year	-----	100,010.10	4,724.81	103,863.86	666.67	204.38
Territorial institutions:	-----	-----	-----	-----	-----	-----
Fifty-fourth fiscal year	-----	51,202.48	15.84	46,176.67	5,000.00	41.65
Fifty-fifth fiscal year	-----	78,848.93	67.53	78,742.78	-----	173.68
Improvement Rio Grande income fund	-----	826.19	-----	8.55	740.46	77.18
Orphan Children's Home, Belen fund	-----	-----	3,859.94	-----	3,719.13	140.81
Water reservoir income, for irrigating purposes	-----	439.29	-----	-----	-----	439.29
Pullman car tax	-----	410.75	-----	205.37	205.38	-----
Annual United States appropriation, agricultural college	-----	25,000.00	-----	-----	25,000.00	-----
Total	282,517.80	767,963.35	348,575.72	348,575.72	610,987.29	439,493.86

## RECAPITULATION.

Balances June 1, 1903	\$282,517.80
Receipts during year	767,963.35
Total to be accounted for	1,050,481.15
Payments during year	610,987.29
Balances June 1, 1904	439,493.86

## DISPOSITION OF FUNDS.

National Bank of Commerce, New York (bond special)	\$103,600.17
First National Bank of Santa Fe	49,737.60
Bank of Commerce, Albuquerque	28,864.64
First National Bank of Las Vegas	50,929.27
First National Bank of Albuquerque	30,911.87
San Miguel National Bank, Las Vegas	30,912.25
First National Bank of Raton	30,660.61
First National Bank of Roswell	15,456.81
National Bank of Commerce of New York	11,965.74
Citizens' National Bank of Roswell	20,480.00
First National Bank of Clayton	20,050.00
First National Bank of Carlsbad	20,100.76
Silver City National Bank	20,608.93
Taos County Bank, Taos, N. Mex	23,818.90
New Mexico Savings Bank and Trust Company, Albuquerque	781.19
Citizens' National Bank of Raton	20,615.12
Total	439,493.86

a Funds not available.



*Banks in which Territorial funds are deposited.*

Name of bank.	Amount applied for.	Amount of bond.	Interest paid on deposit for year.	Balances June 1, 1904.
National Bank of Commerce, New York (bond special) .....				\$103,600.17
First National Bank of Santa Fe .....				49,737.60
Bank of Commerce, Albuquerque .....	\$28,000.00	\$56,000.00	\$864.64	28,864.64
First National Bank of Las Vegas .....	30,000.00	60,000.00	929.27	30,929.27
First National Bank of Albuquerque .....	30,000.00	60,000.00	911.87	30,911.87
San Miguel National Bank, Las Vegas .....	30,000.00	60,000.00	912.25	30,912.25
First National Bank of Raton .....	30,000.00	60,000.00	773.96	30,660.61
First National Bank of Roswell .....	15,000.00	30,000.00	456.81	15,456.81
National Bank of Commerce of New York .....				11,965.74
Citizens' National Bank of Roswell .....	20,000.00	40,000.00	555.90	20,480.00
First National Bank of Clayton .....	20,000.00	40,000.00	600.00	20,050.00
First National Bank of Carlsbad .....	20,000.00	40,000.00	605.60	20,100.76
Silver City National Bank .....	20,000.00	40,000.00	608.93	20,608.93
Taos County Bank, Taos, N. Mex. ....				3,818.90
New Mexico Savings Bank and Trust Co., Albu- querque .....				781.19
Citizens' National Bank of Raton .....	20,000.00	40,000.00	615.12	20,615.12
Total .....	263,000.00	526,000.00	7,834.35	439,498.86

## Statement of the debt of the Territory of New Mexico.

Title of bond.	Law of issue.	Amount outstanding.	Date of bond.	Rate of interest.	When interest is payable.	Place of payment, principal and interest.	Time to run and option.	When due.	Provision for payment.
Capitol building bonds.	Sec. 2527, C. L. ....	{ \$100,000 98,000 }	Sept. 1, 1884 Mar. 1, 1885	<i>P. ct.</i> { 7 }	{ Mar. and Sept. }	{ National Bank of Commerce, New York. }	{ 20 years ----- do }	{ Sept. 1, 1904 Mar. 1, 1905 }	{ Annual tax from Sept. 1, 1884, sufficient to raise 20 per cent of issue for 5 years. }
Current expense bonds. <sup>a</sup>	Chap. 44, laws of 1887, p. 36.	{ 50,000 50,000 50,000 }	May 1, 1887 Nov. 1, 1887 May 1, 1888	{ 6 ----- 6 }	{ May Nov. May }	{ First National Bank, New York. }	{ 20 years; optional at 5 or 10 years from date. ----- do }	{ May 2, 1907 Nov. 1, 1907 May 1, 1908 }	
Provisional indebtedness bonds.	Chap. 122, laws of 1889, p. 235.	{ 90,000 100,000 }	May 1, 1889 Sept. 2, 1889	{ 6 ----- 6 }	{ Mar. and Sept. }	{ National Bank of Commerce, New York. }	{ 30 years; optional after 20 years or ----- do }	{ May 1, 1919 Sept. 2, 1919 }	{ Same provision as for capi- tol contingent. }
Insane asylum bonds, first series.	Chap. 38, laws of 1891, p. 87.	{ 25,000 ----- do }	Oct. 1, 1891	{ 6 ----- 5 }	{ Jan. and July. }	{ do ----- do }	{ do ----- do }	{ Oct. 1, 1921 ----- do }	{ Annual levy after 20 years sufficient to pay bonds at maturity. }
Casual deficit bonds.	Sec. 7, chap. 61, laws of 1893, p. 107.	{ 101,800 ----- do }	May 1, 1893	{ 5 ----- 6 }	{ do ----- do }	{ do ----- do }	{ 30 years; optional after 10 years. ----- do }	{ May 1, 1923 ----- do }	{ Annual tax after 10 years sufficient to pay bonds at maturity. }
Refunding bonds. ....	Sec. 7, chap. 61, laws of 1893, p. 104.	{ 104,000 ----- do }	July 1, 1893	{ 6 ----- 5 }	{ do ----- do }	{ do ----- do }	{ 30 years; optional after 20 years. ----- do }	{ July 1, 1923 ----- do }	{ Annual tax after 20 years sufficient to pay bonds at maturity. }
Penitentiary refunding bonds.	Sec. 11, chap. 61, laws of 1893, p. 105.	{ 71,000 10,000 }	July 1, 1895 Jan. 1, 1894	{ 6 ----- 5 }	{ Mar. and Sept. }	{ do ----- do }	{ do ----- do }	{ July 1, 1924 Jan. 1, 1925 }	{ Same as refunding bonds. }
Territorial institutions bonds.	Sec. 1, chap. 44, laws of 1895.	{ 35,000 ----- do }	July 1, 1895	{ 5 ----- 5 }	{ Jan. and July. }	{ do ----- do }	{ 30 years; optional after 10 years. ----- do }	{ July 1, 1925 ----- do }	{ Annual tax after 10 years sufficient to pay bonds at maturity. }
New Mexico Military Institute bonds.	Sec. 1, chap. 42, laws of 1895.	{ 15,000 ----- do }	do	{ 5 ----- 5 }	{ do ----- do }	{ do ----- do }	{ do ----- do }	{ do ----- do }	{ Do. }
Insane asylum bonds, second series.	Sec. 1, chap. 43, laws of 1895.	{ 30,000 ----- do }	do	{ 5 ----- 5 }	{ do ----- do }	{ do ----- do }	{ 30 years; optional after 20 years. ----- do }	{ Jan. 1, 1925 ----- do }	{ Do. }
Capitol rebuilding bonds.	Sec. 7, chap. 39, laws of 1895.	{ 25,000 50,000 40,000 }	May 1, 1895 Nov. 1, 1895 May 1, 1899	{ 5 ----- 4 }	{ May and Nov. }	{ do ----- do }	{ do ----- do }	{ May 1, 1925 Nov. 1, 1925 May 1, 1929 }	{ Same as capitol contingent fund bonds. }
Capitol rebuilding bonds, second series.	Sec. 1, chap. 33, laws of 1899.	{ 40,000 ----- do }	May 1, 1899	{ 4 ----- 6 }	{ do ----- do }	{ do ----- do }	{ do ----- do }	{ do ----- do }	{ Do. }
Certificates of indebtedness.	Sec. 1, chap. 49, laws of 1899.	{ 100 ----- do }	Mar. 1, 1899	{ 6 ----- 4 }	{ Mar. and Sept. }	{ Treasurer's of- fice, Santa Fe, National Bank of Commerce, New York. }	{ 5 years ----- do }	{ do ----- do }	{ Do. }
General refunding bonds.	Secs. 1 to 12, chap. 58, laws of 1899.	{ 101,000 ----- do }	June 1, 1903	{ 4 ----- 5 }	{ do ----- do }	{ do ----- do }	{ 30 years; optional after 20 years. ----- do }	{ June 1, 1933 ----- do }	{ Annual tax after 10 years sufficient to pay bonds at maturity. }
Total bonded indebtedness.		{ 1,163,900 ----- do }							

<sup>a</sup> These bonds are on their face payable at the First National Bank, New York, but all coupons are paid by the National Bank of Commerce in New York.

Certificate of indebtedness No. 33, Series B, not presented for payment.....	\$100,000
Casual deficit bonds called for redemption on May 1, 1904, but not presented for payment.....	101,800.00
Total.....	101,900.00
SUMMARY OF TERRITORIAL DEBT.	
Territorial bonded debt outstanding June 1, 1903.....	\$1,098,300.00
Issued general refunding bonds Nos. 1 to 101, inclusive, for \$1,000 each.....	101,000.00
Paid during year.....	1,199,300.00
Certificates of indebtedness, Series A.....	\$15,000
Certificates of indebtedness, Series B.....	20,400
Territorial bonded debt outstanding June 1, 1904.....	35,400.00
Funds and sinking funds in hands of Territorial treasurer for redemption of bonded indebtedness on June 1, 1904:	1,163,900.00
For redemption casual deficit bonds with National Bank of Commerce, New York.....	\$101,800.00
For redemption certificate of indebtedness with Territorial treasurer.....	100.00
Capital building bond sinking fund.....	153,600.52
Provisional indebtedness sinking fund.....	38,349.83
Net Territorial debt June 1, 1904.....	293,856.35
	870,043.65



*List of fire insurance companies which have complied with chapter 49, Laws of 1897.*

Name of company.	Location.	Security.	Remarks.
Aachen and Munich Fire Insurance Co.	Aix la Chapelle, Germany.	\$10,000	One bond United States consols, twos, for \$10,000.
American Central Insurance Co.	St. Louis, Mo .....	10,000	Certificate of deposit, First National Bank of Las Vegas, N. Mex.
Atlas Assurance Co .....	London, England .....	10,000	\$6,000 general refunding bonds, \$3,000 refunding bonds, \$1,000 provisional indebtedness bonds.
Ætna Insurance Co .....	Hartford, Conn .....	10,000	Capitol rebuilding bonds.
British America Assurance Co.	Toronto, Canada .....	10,000	Do.
Commercial Union Assurance Co. (Limited).	London, England .....	10,000	One bond United States consols, twos, for \$10,000.
Continental Insurance Co.	New York City .....	10,000	Provisional indebtedness bonds.
Fire Association of Philadelphia.	Philadelphia, Pa .....	11,000	Real estate mortgage.
Fireman's Fund Insurance Co.	San Francisco, Cal ....	10,000	Certificate of deposit, First National Bank of Albuquerque, N. Mex.
German-American Insurance Co.	New York City .....	10,000	Refunding bonds of Territory of New Mexico.
Germania Fire Insurance Co.	.....do .....	10,000	\$5,000 refunding bonds, \$5,000 general refunding bonds of Territory of New Mexico.
Hartford Insurance Co .....	Hartford, Conn .....	10,000	Real estate mortgage.
Insurance Company of North America.	Philadelphia, Pa .....	10,000	\$2,000 provisional indebtedness bonds, Territory of New Mexico; \$8,000 Grant County funding bonds.
Liverpool, London and Globe Insurance Co.	Liverpool, England ...	10,000	\$5,000 refunding bonds, Territory of New Mexico; \$5,000 refunding bonds, Bernalillo County, N. Mex.
London and Lancashire Fire Insurance Co.	.....do .....	10,000	One bond, United States consols, fours, for \$10,000.
National Fire Insurance Co.	Hartford, Conn .....	10,000	City of Silver City, N. Mex., gold refunding bonds.
Niagara Fire Insurance Co.	New York City .....	10,000	Provisional indebtedness bonds.
North British and Mercantile Insurance Co.	London, Edinburgh, and Great Britain.	10,000	Territorial institution bonds.
Norwich Union Fire Insurance Society.	Norwich, England .....	10,000	One bond, United States consols, fours, for \$5,000, and \$5,000 capitol rebuilding bonds of New Mexico.
Northern Assurance Co....	London, England .....	10,000	Certificate of deposit, First National Bank, Santa Fe, N. Mex.
Orient Insurance Co .....	Hartford, Conn .....	10,000	One bond, United States consols, fours, for \$10,000.
Palatine Insurance Co. (Limited).	London, England .....	10,000	One bond, United States consols, twos, for \$10,000.
Royal Insurance Co .....	Liverpool, England ...	10,000	Refunding bonds, Territory of New Mexico.
Scottish Union and National Insurance Co.	Edinburgh, Scotland..	10,000	Certificates of deposite, \$5,000 San Miguel National Bank of Las Vegas, N. Mex., and \$5,000 First National Bank of Albuquerque, N. Mex.
Springfield Fire and Marine Insurance Co.	Springfield, Mass .....	10,000	Refunding bonds, Valencia County, N. Mex.
St. Paul Fire and Marine Insurance Co.	St. Paul, Minn .....	10,000	Refunding bonds (gold), Grant County, N. Mex.
Union Assurance Society of London.	London, England .....	10,000	General refunding bonds, Territory of New Mexico.
Total .....	.....	271,000	

*Assessed valuation of the Territory for the years 1902 and 1903.*

Counties.	1902.				1903.			
	Assessed valuation.	Arith-metrical product.	Cash product.	Per cent collected.	Assessed valuation.	Arith-metrical product.	Cash product.	Per cent collected.
Bernalillo	\$3,893,585.00	\$54,471.25	\$37,975.74	69.7	\$2,905,850.00	\$45,137.78	\$21,963.40	48.6
Chaves	2,789,377.00	39,023.38	33,202.92	85.1	2,825,161.00	43,818.25	20,380.72	46.5
Colfax	2,738,074.00	39,145.06	34,307.67	87.8	2,841,011.00	44,064.08	21,885.33	49.6
Dona Ana	2,063,326.00	28,865.93	22,172.67	76.8	2,077,699.00	32,225.15	13,076.23	40.5
Eddy	1,858,049.00	25,994.11	23,587.26	90.7	1,848,079.00	28,663.70	12,774.89	44.5
Grant	2,826,735.30	39,546.02	34,968.56	88.4	2,836,377.00	43,902.21	20,048.81	45.5
Leonard								
Wood	1,187,882.40	16,618.48	8,328.19	50.1	870,070.00	13,494.78	3,369.03	24.9
Lincoln	1,102,340.00	16,261.14	13,902.84	85.5	1,268,802.00	19,679.11	7,523.24	38.2
Luna	1,396,673.65	19,539.46	17,641.22	90.2	1,468,691.90	22,779.38	10,517.60	46.1
Mora	960,015.00	13,430.60	9,572.41	71.6	1,102,063.00	17,092.99	5,553.14	32.4
McKinley	957,361.00	13,393.49	10,006.25	74.7	941,150.00	14,520.32	6,621.00	45.5
Otero	1,199,429.51	16,780.01	15,523.88	92.5	1,455,425.00	22,573.64	9,351.95	41.4
Rio Arriba	834,681.00	11,677.19	7,795.10	66.7	900,963.00	13,974.40	5,898.30	42.2
San Juan	530,240.00	7,418.06	5,861.56	79.0	594,506.00	9,218.18	3,907.97	42.8
San Miguel	4,368,200.00	61,111.12	38,194.32	62.4	4,541,713.00	70,441.96	21,522.32	30.5
Santa Fe	2,037,390.00	28,503.09	17,728.49	62.2	2,040,517.00	31,648.42	9,812.77	31.0
Sierra	1,476,827.80	20,660.81	16,103.74	77.9	1,254,791.45	18,583.66	8,876.85	47.7
Socorro	1,959,740.00	27,416.77	18,942.75	77.1	1,945,010.00	30,167.10	12,532.80	41.5
Taos	591,746.00	8,278.53	6,290.50	76.0	578,820.00	8,977.49	3,883.96	43.2
Union	1,931,210.00	27,017.63	23,378.81	86.5	1,947,250.00	30,201.84	11,783.11	39.0
Valencia	1,811,110.61	25,337.43	13,924.41	54.9	1,325,247.00	20,554.59	8,407.20	40.9
Quay			974.82	-----	725,317.44	11,249.67	2,875.95	25.5
Roosevelt			2,354.62	-----	566,953.00	8,796.08	4,077.81	46.2
Sandoval			534.28	-----	735,455.00	11,406.90	3,802.17	33.3
Total	38,633,993.27	540,489.56	413,933.51	76.6	39,596,951.79	613,261.58	250,446.55	40.8
Tax levy	13.99 mills.				15.51 mills.			

NOTE.—By acts of the legislature, 1903, the counties of Quay, Roosevelt, and Sandoval were created, Quay being segregated from Guadalupe and Union, Roosevelt from Guadalupe and Chaves, and Sandoval from Bernalillo. By act of same legislature the name of the county of Guadalupe was changed to that of Leonard Wood. Collection of taxes for year 1903 includes collections only on account of the first half.

## REPORT OF THE AUDITOR.

[W. G. SARGENT, Auditor.]

STATEMENT A.—*Payments by counties of Territorial tax for year ending June 1, 1904.*

County.	Fifty-fourth fiscal year.		Fifty-fifth fiscal year.		Total pay-ments.
	Third quarter.	Fourth quarter.	First quarter.	Second quarter.	
Bernalillo	\$16,643.02	\$1,577.91	\$21,049.40	\$805.02	\$40,075.35
Chaves	14,977.27	336.27	21,253.49	979.71	37,546.74
Colfax	14,847.42	1,439.28	21,191.75	1,147.05	38,625.50
Dona Ana	8,541.19	991.52	12,550.98	1,475.64	23,559.33
Eddy	10,757.59	1,402.83	13,144.44	667.41	25,972.27
Grant	14,749.76	1,063.92	20,515.46	746.64	37,075.78
Leonard Wood	2,068.71	399.80	3,592.09	484.54	6,545.14
Lincoln	6,466.11	383.84	7,605.13	304.72	14,759.80
Luna	8,039.03	399.48	10,093.93	798.83	19,331.27
Mora	3,985.49	894.86	5,761.96	341.60	10,983.91
McKinley	4,737.66	96.07	6,521.11	69.06	11,423.90
Otero	6,632.18	1,229.91	8,996.51	629.37	17,487.97
Quay	128.80	244.75	3,326.92	392.75	4,093.22
Rio Arriba	2,764.16	210.34	4,774.14	1,908.06	9,656.70
Roosevelt	1,816.20	569.91	4,165.76	148.66	6,700.53
San Juan	1,795.83	535.14	3,435.07	1,050.04	6,816.08
Santa Fe	6,056.07	1,194.86	8,982.97	1,050.91	17,284.81
San Miguel	17,384.12	1,084.04	21,085.98	1,217.93	40,772.07
Sierra	7,349.68	382.54	9,409.18	665.49	17,806.89
Socorro	8,486.86	1,017.74	14,763.25	765.90	25,033.75
Sandoval	340.80	88.26	3,889.93	91.50	4,410.49
Taos	2,348.70	345.48	4,083.84	235.05	7,013.07
Union	6,446.54	1,845.20	11,832.99	1,393.16	21,517.89
Valencia	6,891.33	37.89	8,328.60	565.67	15,823.54
Total	174,254.57	17,771.84	250,354.88	17,934.71	460,316.00

STATEMENT B.—*Receipts from sources other than taxation for year ending June 1, 1904.*

Source from which received.	Fifty-fourth fiscal year.		Fifty-fifth fiscal year.		Total receipts.
	Third quarter.	Fourth quarter.	First quarter.	Second quarter.	
Sale of compiled laws.....	\$76.50	\$76.50	\$68.00	\$102.00	\$323.00
J. H. Vaughn, Territorial treasurer, interest on deposits.....	1,846.44	1,896.50	2,010.74	2,080.67	7,834.35
H. O. Bursum, superintendent of penitentiary, convicts' earnings.....	3,205.83	3,801.00	6,176.80	5,956.75	19,140.38
J. W. Raynolds, Territorial secretary, fees.....	1,780.00	2,375.00	2,510.00	4,935.00	11,600.00
J. A. La Rue, secretary cattle sanitary board.....	1,000.00	3,500.00	-----	4,000.00	8,500.00
Southwestern and International Express Co.....	126.58	-----	-----	-----	126.58
W. G. Sargent, Territorial auditor.....	7,448.61	-----	-----	-----	7,448.61
Clerks of district courts.....	2,331.70	2,351.80	3,212.95	2,838.60	10,735.05
Pullman Car Co.....	-----	-----	-----	410.75	410.75
J. H. Vaughn, Territorial treasurer, on account of loan Louisiana-Purchase Exposition.....	-----	-----	-----	10,500.00	10,500.00
Sale of general refunding bonds.....	-----	-----	-----	101,000.00	101,000.00
Interest fund.....	-----	-----	-----	415.22	415.22
Interest on deposits.....	-----	-----	-----	800.00	800.00
A. A. Keen, commissioner public lands.....	26,802.97	40,940.38	17,449.07	18,620.99	103,813.41
Total.....	44,618.63	54,941.18	31,427.56	151,659.98	282,647.35

## RECAPITULATION.

From county tax levy.....	\$174,254.57	\$17,771.84	\$250,354.88	\$17,934.71	\$460,316.00
Sources other than taxation.....	44,618.63	54,941.18	31,427.56	151,659.98	282,647.35
Total.....	218,873.20	72,713.02	281,782.44	169,594.69	742,963.35

STATEMENT C.—*Quarterly statement covering the third quarter of the fifty-fourth fiscal year commencing June 1, 1903, and ending August 31, 1903.*

Fund or account.	Balances June 1, 1903.	Receipts during quarter.	Transfers to funds.	Transfer from funds.	Warrants drawn.	Balances Aug. 31, 1903.
Capitol:						
Contingent expense.....	\$128.67	-----	\$2,784.15	-----	\$1,584.75	\$1,328.06
Contingent bond sinking fund.....	13.77	-----	-----	-----	-----	13.77
Cattle indemnity fund.....	12,297.05	\$5,708.47	-----	-----	-----	18,005.52
Compensation of assessors.....	2,122.99	7,267.88	-----	-----	6,893.08	2,497.79
Special tax, fiftieth fiscal year.....	27.97	-----	-----	-----	-----	27.97
Agricultural college.....	156.23	-----	2,307.76	-----	1,068.01	1,395.98
Sheep sanitary fund.....	2,758.30	899.12	-----	-----	-----	3,157.42
University of New Mexico, deficiencies.....	249.69	-----	2,884.69	-----	2,917.37	217.01
University of New Mexico.....	549.32	-----	6,346.32	-----	6,418.22	477.42
Deaf and dumb asylum.....	72.80	-----	-----	-----	72.80	-----
School of mines.....	329.59	-----	3,807.80	-----	1,834.03	2,303.36
Normal school:						
Silver City.....	826.05	-----	3,692.42	-----	1,122.39	3,396.08
Las Vegas.....	499.39	-----	5,769.39	-----	2,778.84	3,489.94
Military institute.....	273.39	-----	4,068.59	-----	4,008.16	303.82
Insane asylum.....	998.79	-----	24,998.83	-----	23,711.64	2,285.98
Interest fund.....	55,190.60	-----	24,919.80	-----	-----	-----
Militia fund.....	-----	-----	817.16	\$816.16	-----	80,110.40
Supreme court fund.....	5.03	-----	154.63	159.66	-----	-----
Penitentiary current expense.....	1,579.68	-----	4,178.02	-----	2,679.96	3,077.74
School fund.....	725.00	-----	-----	-----	-----	725.00
Penitentiary maintenance.....	613.41	-----	11,681.39	-----	11,885.68	409.12
Convict earnings.....	417.17	3,205.83	-----	-----	1,957.40	1,665.60
Salary fund.....	17,156.41	2,331.70	17,366.05	1,070.72	15,516.94	20,296.50
Miscellaneous.....	294.08	-----	9,032.72	9,326.80	-----	-----
Compilation fund.....	51.00	76.50	-----	-----	-----	127.50



## STATEMENT C.—Quarterly statement covering the third quarter of the fifty-fourth fiscal year, etc.—Continued.

Fund or account.	Balances, June 1, 1903.	Receipts during quarter.	Transfers to funds.	Transfer from funds.	Warrants drawn.	Balances, Aug. 31, 1903.
5 per cent proceeds United States land sales	\$6,742.21					\$6,742.21
Common school income	2,858.23	\$1,409.80			\$3,009.83	1,258.20
Interest on deposits	1,150.52	1,846.44		\$1,400.00	164.51	1,432.45
Deficiency fund	154.60					154.60
Pullman tax fund	200.10					200.10
Legal expense	192.60					192.60
Printing laws and journals	60.16					60.16
Translating laws and journals	473.43					473.43
Penitentiary board	912.32		\$778.71		745.25	945.78
Equalization board	296.76		292.01			588.77
Sisters' Hospital, Albuquerque	177.29		358.62		177.29	358.62
St. Vincent's Hospital, Santa Fe			1,434.52		1,434.52	
Orphans' school, Santa Fe			2,151.77		2,151.77	
Grant County Hospital	1,278.56		717.27		322.91	1,672.92
Sisters of Mercy Hospital	554.04		717.27		335.50	935.81
Ladies' Hospital, Deming	240.76		478.17		239.95	478.98
Eddy County Hospital	701.74		597.74		120.70	1,178.78
Ladies' Relief Society, Las Vegas	295.86		597.74		571.58	322.02
Children's Home, Albuquerque	554.72					554.72
Publication of roster New Mexico volunteers	731.36		33.37		207.95	756.88
Rent of armories	123.78		389.13		217.50	295.41
Support of National Guard	3.15		194.56		128.89	68.82
Printing briefs	657.96		79.84		19.52	718.28
Printing dockets and calendars	46.16		79.82		40.50	85.48
Capitol maintenance, special	3,745.56				1,475.50	2,270.06
United States land commission	6,787.03				1,602.88	5,184.15
Southwestern and International Express Co		126.58		63.29		63.29
Scenic Route			1,400.00		1,282.12	117.88
Agricultural college, permanent		4,062.72				4,062.72
Miners' Hospital, permanent		9,066.62				9,066.62
Supreme court, legal expense	992.68		320.17			1,372.85
Auditor's contingent expense	14.50		354.84		142.00	227.34
Library:						
Purchase of books	1,102.44		608.27			1,710.71
Payment of freight	469.37		152.07			621.44
Supreme Court Reports, vol. 1	300.00					300.00
New Mexico Reports, vol. 11	922.81					922.81
Supreme Court Reports, vol. 2	300.00					300.00
Historical Society:						
Purchase of relics	129.65		126.74		247.40	8.99
Contingent expenses	259.59		253.43		495.03	17.99
Bureau of immigration, contingent expenses	1,186.31		1,520.67		668.61	2,038.37
Weather bureau	822.24		354.84		140.00	1,037.08
Solicitor-general, contingent expenses	61.07		152.07		100.00	113.14
Printing tax books	352.45		608.27		707.00	253.72
Superintendent public instruction:						
Rent	5.33					5.33
Contingent expenses	217.71		253.43		23.85	447.29
Treasurer's contingent expense	283.30		506.88		165.10	625.08
Governor's contingent expense	4,506.70		1,520.67		5,299.92	727.45
Transportation of convicts			2,534.45		1,028.02	1,506.43
Printing poll books	344.97					344.97
Furnishing normal school, Silver City	95.94					95.94
Reimbursing public land board	4,092.66		1,659.50		1,394.39	4,357.77

## STATEMENT C.—Quarterly statement covering the third quarter of the fifty-fourth fiscal year, etc.—Continued.

Fund or account.	Balances June 1, 1903.	Receipts during quarter.	Transfers to funds.	Transfer from funds.	Warrants drawn.	Balances Aug. 31, 1903.
Furnishing normal school, Las Vegas.....	\$318.45		\$1,106.33		\$1,424.78	
Money's Digest Supreme Court Reports.....	13.29				13.29	
Agricultural college in- come.....	33.19				33.19	
Normal school:						
Silver City, income.....	258.84	\$150.00				\$408.84
Las Vegas, income.....		150.00				150.00
School of mines, income.....	225.27	142.80			225.27	142.80
Military institute, income.....	256.13	150.00			406.13	
Reform school, income.....	255.87	150.03			48.00	357.90
Blind asylum, income.....	312.90	150.06			42.35	420.61
Deaf and dumb asylum, in- come.....	385.43	150.00			535.43	
Miners' Hospital, income.....	287.69	150.03				437.72
Insane asylum, income.....	30.80	157.74				188.54
Penitentiary, income.....	.29	150.27			25.15	125.41
Water reservoir, perman- ent.....	60.00					60.00
Territorial purposes, fifty- fourth fiscal year.....		70,906.77	27.15	\$70,933.92		
Territorial institutions, fifty-fourth fiscal year.....		45,369.95	15.84	40,385.79	5,000.00	
Charitable institutions, fifty-fourth fiscal year.....	227.21	6,823.24	2.65	7,053.10		
Special purposes, fifty- fourth fiscal year.....	96.24	2,885.65	1.13	2,765.83		217.19
School of mines, permanent.....						
Penitentiary, permanent.....	1,014.03	1,920.00			2,504.72	429.31
Normal university, Las Vegas, permanent.....	4,566.60					4,566.60
Normal school, Silver City, permanent.....	4,766.60				4,766.60	
Deaf and dumb asylum, permanent.....	2,646.60				2,646.60	
Geological survey.....	10,572.92	2,885.96	1.13	13,460.01		
Exposition fund.....	149.32	4,630.27	1.81	2,551.39		2,230.01
Provisional indebtedness, sinking fund.....	33,976.75	5,811.78	2.26			39,790.79
Capitol building bonds sink- ing fund.....	110,613.28	17,327.42	6.79			127,947.49
Reform school, permanent.....	7,081.00					7,081.00
Certificates of indebtedness.....	19,331.82	11,518.06	4.53			30,854.41
Blind asylum, permanent.....	5,406.50	2,177.28				7,583.58
Temporary provisional in- debtedness.....	2,876.43	2,448.61	2,551.39		5,000.00	2,876.43
Maintenance board of pub- lic lands.....	3,479.75				1,298.72	2,181.03
Palace income fund.....	1,317.34	239.00			1.65	1,554.69
Military institute, perma- nent.....		6,426.62			6,426.62	
Total.....	352,795.34	218,873.20	149,987.67	149,987.67	139,507.76	432,160.78

## RECAPITULATION.

Balances June 1, 1903.....	\$352,795.34
Receipts during quarter.....	218,873.20
Total.....	571,668.54
Warrants drawn during quarter.....	139,507.76
Balances August 31, 1903.....	432,160.78

NOTE.—Payments of interest coupons, maturing bonded indebtedness, certificates of indebtedness, cattle indemnity and sheep sanitary funds, and exposition funds are made direct by treasurer, and no warrants against these funds are drawn by auditor. Payments made from such funds are only charged against same in the office of the auditor at the time of the annual burning of warrants, the last occurring November 16, 1902.

STATEMENT D.—Quarterly statement, covering the fourth quarter of the fifty-fourth fiscal year, commencing September 1, 1903, and ending November 30, 1903.

Fund or account.	Balances Sept. 1, 1903.	Receipts during quarter.	Trans- fers to funds.	Transfer from funds.	War- rants drawn.	Payments direct by treas- urer.	Balances Dec. 1, 1903.
Capitol:							
Contingent expense	\$1,328.07		\$1,242.78		\$2,567.35		\$3.50
Contingent bond sink- ing fund	13.77						13.77
Special tax, fiftieth fiscal year	27.97						27.97
Agricultural college	1,395.98		176.32		1,397.19		175.11
University of New Mexico	477.42		484.90		800.95		161.37
Deficiencies	217.01		220.41		364.07		73.35
School of mines	2,303.36		290.94		2,303.36		290.94
Normal school:							
Silver City	3,396.08		282.13		3,330.03		348.18
Las Vegas	3,489.94		440.84		3,489.94		440.84
Military institute	303.82		308.58				612.40
Insane asylum	2,285.98		881.66				3,167.64
Permanent		\$1,443.87					1,443.87
Interest fund	80,110.40		2,361.99			\$63,827.50	18,644.89
Militia fund			77.46	\$77.46			
Supreme court fund			14.65	14.65			
Penitentiary current ex- pense	3,077.74		396.01		3,473.75		
School fund	725.00						725.00
Penitentiary maintenance	409.12		1,107.20		1,516.32		
Convict earnings	1,665.60	3,801.00			5,147.75		318.85
Salary fund	20,266.50	2,351.80	1,646.01	101.48	15,706.22		8,456.61
Miscellaneous			856.16	856.16			
Compilation fund	177.50	76.50					204.00
5 per cent proceeds United States land sales	6,742.21						6,742.21
Common school income	1,258.20	12,024.30			1,488.05		11,794.45
Deficiency fund	154.60						154.60
Pullman tax fund	200.10					200.10	
Legal expense	192.60						192.60
Printing laws and journals	60.16						60.16
Translating laws and jour- nals	473.43						473.43
Penitentiary board	945.78		73.80		600.00		419.58
Equalization board	588.77		27.68		494.60		121.85
Sisters' Hospital, Albu- querque	358.62		26.55		358.62		26.55
St. Vincent's Hospital, Santa Fe			106.15				106.15
Orphans' school, Santa Fe			159.25				159.25
Grant County Hospital	1,672.92		53.08		542.57		1,183.43
Sisters of Mercy, Silver City	935.81		53.08		273.01		715.88
Ladies' Hospital, Deming	478.98		35.38		476.03		38.33
Eddy County Hospital	1,178.78		44.24		278.30		944.72
Ladies' Relief Society, Las Vegas	322.02		44.24		322.02		44.24
Children's Home, Albu- querque	554.72				431.57		123.15
Publication roster, New Mexico Volunteers	756.88		22.13		77.19		701.82
Rent of armories	295.41		36.89		332.30		
Support of National Guard	68.82		18.44		87.26		
Printing briefs	718.28		7.32		50.47		675.13
Printing dockets and cal- endars	85.48		7.33		56.50		36.31
Supreme court legal ex- penses	1,372.85		34.90				1,407.75
Auditor's contingent ex- penses	227.34		32.57		50.64		209.27
Library:							
Purchase of books	1,710.71		55.84				1,766.55
Payment of freight	621.44		13.96		193.55		441.85
Supreme Court Reports, vol. 1	300.00						300.00
New Mexico Reports, vol. 11	922.81						922.81
Supreme Court Reports, vol. 2	300.00						300.00
Historical Society:							
Purchase of relics	8.99		11.63				20.62
Contingent expenses	17.99		23.26				41.25
Bureau of immigration, contingent expenses	2,038.37		139.59		1,899.30		278.66
Weather Bureau	1,037.08		32.57		327.00		742.65
Solicitor-general, contin- gent expenses	113.14		13.96		100.00		27.10



## STATEMENT D.—Quarterly statement, covering the fourth quarter of the fifty-fourth fiscal year, etc.—Continued.

Fund or account.	Balances Sept. 1, 1903.	Receipts during quarter.	Trans- fers to funds.	Transfer from funds.	War- rants drawn.	Payments direct by treas- urer.	Balances Dec. 1, 1903.
Printing tax books.....	\$253.72		\$55.84				\$309.56
Superintendent public in- struction:							
Rent.....	5.33						5.33
Contingent expenses.....	447.29		23.27		\$327.40		143.16
Treasurer's contingent ex- penses.....	625.08		46.57		373.15		298.46
Governor's contingent ex- penses.....	727.45		139.59		700.08		166.96
Transportation of convicts.....	1,506.43		232.65		1,393.36		345.72
Printing poll books.....	344.97						344.97
Furnishing normal school, Silver City.....	95.94						95.94
Reimbursing public land board.....	4,357.77				1,128.00		3,229.77
Agricultural college in- come.....		\$46.34					46.34
Normal school:							
Silver City, income.....	408.84	136.04					544.88
Las Vegas, income.....	150.00	136.03			192.77		93.26
School of mines income.....	142.80	252.83			143.44		252.19
Military institute income.....		222.19					222.19
Reform school income.....	357.90	175.68					533.58
Blind asylum income.....	420.61	252.93			500.00		173.54
Deaf and dumb asylum income.....		252.34					252.34
Miners' hospital income.....	437.72	222.09					659.81
Insane asylum income.....	188.54	154.63					343.17
Penitentiary income.....	125.41	227.33			192.92		159.82
Palace income.....	1,554.69	209.00			100.00		1,663.69
Water reservoir, perma- nent.....	60.00						60.00
Territorial purposes, fifty- fourth fiscal year.....		7,656.70		\$6,723.37	933.33		
Territorial institutions, fifty-fourth fiscal year.....		3,085.78		3,085.78			
Charitable institutions, fifty-fourth fiscal year.....		521.97		521.97			
Special purposes, fifty- fourth fiscal year.....	217.19	220.30					437.49
Compensation of assessors.....	2,497.79	748.86			1,042.88		2,203.77
School of mines, permanent.....		2,400.00			480.00		1,920.00
Normal school, Silver City, permanent.....							
Penitentiary, permanent.....	429.31	1,920.00			782.90		1,566.41
Military institute, perma- nent.....		4,560.90					4,560.90
Agricultural college, perma- nent.....	4,062.72	4,050.60		2,000.00			6,113.32
Blind asylum, permanent.....	7,583.58	1,813.02					9,396.60
Miners' hospital, perma- nent.....	9,066.62	2,400.00		2,000.00	9,466.62		
Deaf and dumb asylum, permanent.....		1,920.00					1,920.00
Normal university, Las Vegas, permanent.....	4,566.60				4,566.60		
Geological survey.....		220.73					220.73
Provisional indebtedness, sinking.....	39,790.79	569.06				\$10,000.00	30,359.85
Capitol building bond sinking fund.....	127,947.49	1,695.74					129,643.23
Southwestern and Inter- national Express Co.....	63.29						63.29
Scenic route.....	117.88		1,100.00		1,189.45		28.43
Sheep sanitary fund.....	3,157.42	251.00				3,205.11	203.31
Exposition fund, fifty- fourth fiscal year.....	2,230.01	353.92				1,500.00	1,083.93
United States land com- mission.....	5,184.15				1,831.12		3,353.03
Cattle indemnity fund.....	18,005.52	4,112.03				19,561.41	2,556.14
Reform school, permanent.....	7,081.00	5,294.07					12,375.07
Temporary provisional in- debtedness.....	2,876.43				2,876.43		
Maintenance board of pub- lic lands.....	2,181.03		4,000.00		970.50		5,210.53
Interest on deposits.....	1,432.45	1,896.50		2,078.89	291.35		958.71
Interest and sinking fund certificates of indebted- ness.....	30,854.41	1,127.42				25,165.00	6,816.83

## STATEMENT D.—Quarterly statement, covering the fourth quarter of the fifty-fourth fiscal year, etc.—Continued.

Fund or account.	Balances Sept. 1, 1903.	Receipts during quarter.	Trans- fers to funds.	Transfer from funds.	War- rants drawn.	Payments direct by treas- urer.	Balances Dec. 1, 1903.
Capitol maintenance, special	\$2,270.06				\$2,270.01		\$0.05
Territorial purposes, fifty-fifth fiscal year		\$1,485.91					1,485.91
Territorial institutions, fifty-fifth fiscal year		1,247.20					1,247.20
Charitable institutions, fifty-fifth fiscal year		200.56					200.56
Louisiana Purchase Exposition, fifty-fifth fiscal year		149.66					149.66
Improvement Rio Grande, income		826.19					826.19
Total	432,160.78	72,713.02	\$17,459.76	\$17,459.76	80,288.22	\$123,459.12	301,126.46

## RECAPITULATION.

Balance September 1, 1903	\$432,160.78
Receipts during quarter	72,713.02
	504,873.80

Warrants drawn during quarter	\$80,288.22
Payments direct by treasurer include interest coupons, maturing bonded indebtedness, cattle indemnity and sheep sanitary funds, Pullman tax and St. Louis Exposition funds, for which the auditor draws no warrants and against which funds no charge is made in the office of the auditor until the annual burning of warrants, the last occurring November 12, 1903, at which time the treasurer presented for credit canceled coupons and bonds and other evidences of payments from above-mentioned funds to the amount of	123,459.12
	203,747.34
Balance December 1, 1903	301,126.46

## STATEMENT E.—Quarterly statement covering the first quarter of the fifty-fifth fiscal year, commencing December 1, 1903, and ending February 29, 1904.

Fund or account.	Balances Dec. 1, 1903.	Receipts during quarter	Transfers to funds.	Transfers from funds.	Warrants drawn.	Balances Mar. 1, 1904.
Capitol:						
Contingent expense	\$3.50		\$3,705.86		\$1,226.45	\$2,482.91
Contingent bond sinking fund	13.77					13.77
Special tax, fiftieth fiscal year	27.97					27.97
Agricultural college	175.11		5,953.09		5,753.05	375.15
University of New Mexico	161.37		9,800.77		9,331.78	630.36
Deficiencies	73.35		141.11		191.41	23.05
Deaf and dumb asylum			1,460.06			1,460.06
School of mines	290.94		6,756.49		4,132.56	2,914.87
Normal school:						
Silver City	348.18		7,480.87		4,343.19	3,485.86
Las Vegas	440.84		7,582.46		4,750.06	3,273.24
Military institute	612.40		6,767.78		4,460.14	2,920.04
Insane asylum	3,167.64		22,465.16		3,167.64	22,465.16
Permanent	1,443.87					1,443.87
Interest fund	18,644.89		30,632.69			49,277.58
Supreme court fund			197.34	\$197.34		
Penitentiary current expense			6,512.13		2,196.64	4,315.49
School fund	725.00					725.00
Penitentiary maintenance			14,822.54		13,514.98	1,307.56
Convict earnings	318.85	\$6,176.80			5,968.43	527.22
Salary fund	8,456.61	3,212.95	27,115.82	1,730.20	10,064.93	26,990.25
Miscellaneous			9,042.31	9,042.31		
Compilation fund	204.00	68.00				272.00
5 per cent proceeds United States land sales	6,742.21	5,133.71				11,875.92
Common school income	11,794.45	10,375.49			16,292.29	5,877.65
Deficiency fund	154.60					154.60
Pullman tax fund						
Legal expense	192.60					192.60
Printing laws and journals	60.16					60.16
Translating laws and journals						
Penitentiary board	473.43		741.08		116.95	473.43
	419.58					1,043.71

## STATEMENT E.—Quarterly statement covering the first quarter of the fifty-fifth fiscal year, etc.—Continued.

Fund or account.	Balances Dec. 1, 1903.	Receipts during quarter.	Transfers to funds.	Transfers from funds.	Warrants drawn.	Balances Mar. 1, 1904.
Equalization board	\$121.85		\$989.12		\$580.00	\$530.97
Sisters' Hospital, Albuquerque	26.55		1,168.49		691.95	503.09
St. Vincent's Hospital, Santa Fe	106.15		1,752.74		1,104.25	754.64
Orphans' school, Santa Fe	159.25		2,629.10		1,656.40	1,131.95
Grant County Hospital	1,183.43		876.38		573.95	1,485.86
Sisters of Mercy, Silver City	715.88		876.38		374.10	1,218.16
Ladies' Hospital, Deming	38.33		876.38			914.71
Eddy County Hospital	944.72		876.38		150.55	1,670.55
Ladies' Relief Society, Las Vegas	44.24		1,168.49		1,140.70	72.03
Children's Home, Albuquerque	123.15					123.15
Publication roster New Mexico Volunteers	701.82					701.82
Rent of armories			370.78		204.80	165.98
Support of National Guard			247.17		88.19	158.98
Printing briefs	675.13		98.66		149.22	624.57
Printing dockets and calendars	36.31		98.68		64.00	70.99
Supreme court, legal expenses	1,407.75					1,407.75
Auditor's contingent expenses	209.27		345.89		232.25	322.91
Library:						
Purchase of books	1,766.55		247.06		338.50	1,675.11
Payment of freight	441.85		49.41			491.26
Supreme Court Reports, vol. 1	300.00				300.00	
New Mexico Reports, vol. 11	922.81					922.81
Supreme Court Reports, vol. 2	300.00				300.00	
Historical Society:						
Purchase of relics	20.62		247.07			267.69
Contingent expenses	41.25		247.07			288.32
Bureau of immigration, contingent expenses	278.66		988.23			1,266.89
Weather bureau	742.65		247.06			989.71
Solicitor-general, contingent expenses	27.10					27.10
Printing tax books	309.56		839.98			1,149.54
Superintendent public instruction:						
Rent	5.33					5.33
Contingent expenses	143.16		494.11		296.00	341.27
Treasurer's contingent expenses	298.46		494.11		185.84	606.73
Governor's contingent expenses	166.96		988.23		333.32	821.87
Transportation of convicts	345.72		2,470.58		959.19	1,857.11
Printing poll books	344.97		592.92			937.89
Furnishing normal school, Silver City	95.94					95.94
Reimbursing public land board	3,229.77				326.00	2,903.77
Agricultural college, income	46.34	\$103.38			149.72	
Normal school:						
Silver City, income	544.88	50.00				594.88
Las Vegas, income	93.26	50.00			143.26	
School of mines income	252.19	183.59			252.19	182.59
Military institute income	222.19					222.19
Reform school income	533.58	50.00				583.58
Blind asylum income	173.54					173.54
Deaf and dumb asylum income	252.34	72.40				324.74
Miners' hospital income	659.81	33.00				692.81
Insane asylum income	343.17	98.75			375.17	66.75
Penitentiary income	159.82					159.82
Palace income	1,663.69	338.00			1,792.53	209.16
Water reservoir permanent	60.00					60.00
Territorial purposes, fifty-fourth fiscal year		3,394.83		\$3,394.83		
Territorial institutions, fifty-fourth fiscal year		1,975.54		1,975.54		
Special purposes, fifty-fourth fiscal year	437.49	141.45				578.94



STATEMENT E.—*Quarterly statement covering the first quarter of the fifty-fifth fiscal year, etc.—Continued.*

Fund or account.	Balances Dec. 1, 1903.	Receipts during quarter.	Transfers to funds.	Transfers from funds.	Warrants drawn.	Balances Mar. 1, 1904.
Charitable institutions, fifty-fourth fiscal year.		\$335.97				\$335.97
Compensation of assessors.	\$2,203.77	10,438.53			\$10,627.72	2,014.38
School of mines perma- nent.	1,920.00				1,920.00	
Normal school, Silver City, permanent.						
Penitentiary permanent.	1,566.41				1,560.10	6.31
Military institute perma- nent.	4,560.90					4,560.90
Agricultural college perma- nent.	6,113.32	480.75				6,594.07
Blind asylum permanent.	9,396.60				9,396.60	
Deaf and dumb asylum, permanent.	1,920.00					1,920.00
Normal university, Las Vegas, permanent.						
Geological survey.	220.73	141.59				362.32
Provisional indebtedness, sinking fund.	30,359.85	7,443.28				37,803.13
Capitol building bond sink- ing fund.	129,643.23	22,323.73				151,966.96
Southwestern and Interna- tional Express Co.	63.29					63.29
Scenic Route.	28.43		\$2,500.00		1,536.17	992.26
Sheep sanitary fund.	203.31	4,024.37				4,227.68
Exposition fund, fifty- fourth fiscal year.	1,083.93	226.24				1,310.17
United States land com- mission.	3,353.03				1,126.70	2,226.33
Cattle indemnity fund.	2,556.14	5,655.78				8,211.92
Reform school, permanent.	12,375.07	480.00				12,855.07
Maintenance board of pub- lic lands.	5,210.53				597.95	4,612.58
Interest on deposits.	958.71	2,010.74		\$2,500.00		469.45
Interest and sinking fund certificates of indebted- ness.	6,816.83	14,889.94				21,706.77
Capitol maintenance, spe- cial.	.05					.05
Territorial purposes, fifty- fifth fiscal year.	1,485.91	88,432.57	3,394.83	92,646.64	666.67	
Territorial institutions, fifty-fifth fiscal year.	1,247.20	73,215.33		74,462.53		
Charitable institutions, fifty-fifth fiscal year.	200.56	11,630.46		11,831.02		
Louisiana Purchase Exposi- tion, fifty-fifth fiscal year.	149.66	8,595.47				8,745.13
Improvement Rio Grande, income.	826.19				220.60	605.59
Miners' hospital.			1,460.05			1,460.05
Blind asylum.			1,460.06		603.40	856.66
Reform school.			1,460.05			1,460.05
Gallup Hospital.			876.38		499.06	377.32
Sisters of Loretto, Taos.			730.30			730.30
Secretary's contingent ex- penses.			790.59		400.00	390.59
Orphan Children's Home, Belen.			3,650.12			3,650.12
Militia fund.			617.95	617.95		
Total.	301,126.46	281,782.46	198,398.36	198,398.36	127,427.55	455,481.35

## RECAPITULATION.

Balance December 1, 1903.	\$301,126.46
Receipts during quarter.	281,782.44
	582,908.90
Warrants drawn during quarter.	127,427.55
Balance March 1, 1904.	455,481.35

NOTE.—Payment of interest coupons, maturing bonded indebtedness, certificates of indebtedness, cattle indemnity and sheep sanitary funds, and exposition funds are made direct by treasurer, and no warrants against these funds are drawn by auditor. Payments made from such funds are only charged against same in the office of the auditor at the time of the annual burning of warrants, the last occurring November 12, 1903.

## STATEMENT F.—Quarterly statement covering the second quarter of the fifty-fifth fiscal year, commencing March 1, 1904, and ending May 31, 1904.

Fund or account.	Balances Mar. 1, 1904.	Receipts during quarter.	Transfers to funds.	Transfer from funds.	Warrants drawn.	Balances May 31, 1904.
Capitol:						
Contingent expenses	\$2,482.91		\$448.69		\$1,939.70	\$991.90
Contingent bond sinking fund	13.77					13.77
Special tax, fiftieth fiscal year	27.97					27.97
Agricultural college	375.15		377.40			752.55
University of New Mexico	630.36		660.17		1,078.38	212.15
Deficiencies	23.05		52.11		62.71	12.45
Deaf and dumb asylum	1,460.06		83.92		1,460.06	83.92
Orphans' (children) Home, Belen	3,650.12		209.82		3,719.13	140.81
School of mines	2,914.87		446.46		296.96	3,064.37
Normal school:						
Silver City	3,485.86		486.33		2,775.00	1,197.10
Las Vegas	3,273.24		523.86		3,462.29	334.81
Military institute	2,920.04		450.62		3,225.32	145.34
Insane asylum	22,465.16		1,467.34		22,465.16	1,467.34
Permanent	1,443.87			\$1,000.00		443.87
Interest fund	49,277.58	\$415.22	3,708.87			53,401.67
Militia fund			74.82	61.47		13.35
Supreme court fund			23.89	23.89		
Penitentiary current expense	4,315.49		788.46		3,294.96	1,808.99
School fund	725.00					725.00
Penitentiary maintenance	1,307.56		1,794.65		1,670.61	1,431.60
Convict earnings	527.22	5,956.75			2,865.48	3,618.49
Salary fund	26,990.25	2,838.60	3,283.04	4,909.54	15,424.87	12,777.48
Miscellaneous			1,094.80	1,094.80		
Compilation fund	272.00	102.00				374.00
Five per cent proceeds						
United States land sales	11,875.92					11,875.92
Common school income	5,877.65	1,808.32		571.45	50.00	7,064.52
Deficiency fund	154.60					154.60
Pullman tax fund		410.75		205.37		205.38
Legal expense	192.60					192.60
Printing laws and journals	60.16					60.16
Translating laws and journals						
Penitentiary board	473.43					473.43
Equalization board	1,043.71		89.72		366.95	766.48
Palace income	530.97		119.82			650.79
Sisters of Loretto, Taos	209.16	313.00			498.97	23.19
Sisters of Mercy, Silver City	730.30		27.73			758.03
Gallup Hospital	377.32		33.27		323.30	87.29
Sisters' Hospital, Albuquerque						
St. Vincent's Hospital, Santa Fe	503.09		66.28		569.37	
Orphans' school, Santa Fe	754.64		153.90		754.64	153.90
Grant County Hospital	1,131.95		230.86		1,131.95	230.86
Sisters of Mercy, Silver City	1,485.86		76.95		449.65	1,113.16
Ladies' Hospital, Deming	1,218.16		76.95		378.01	917.10
Eddy County Hospital	914.71		62.40		856.38	120.73
Ladies' Relief Society, Las Vegas	1,670.55		69.67		605.88	1,134.34
Children's Home, Albuquerque	72.03		80.84		72.03	80.84
Publication roster, New Mexico Volunteers	123.15					123.15
Rent of armories	701.82				74.15	627.67
Support of National Guards	165.98		36.88		161.30	41.56
Printing briefs	158.98		24.59		151.71	31.86
Printing dockets and calendars	624.57		11.94		47.70	588.81
Supreme court legal expense	70.99		11.95		70.99	11.95
Auditor's contingent expense	1,407.75					1,407.75
Library:						
Purchase of books	322.91		41.89		242.75	122.05
Payment of freight	1,675.11		29.91		349.90	1,355.12
New Mexico Reports, Vol. 11	491.26		5.98		100.00	397.24
Historical Society:	922.81					922.81
Purchase of relics						
Contingent expenses	267.69		29.91			297.60
Bureau of immigration, contingent expenses	288.32		29.91			318.23
Secretary's contingent expenses	1,266.89		119.65		497.90	888.64
	390.59		95.72		300.00	186.31

## STATEMENT F.—Quarterly statement covering the second quarter of the fifty-fifth fiscal year, etc.—Continued.

Fund on account.	Balances Mar. 1, 1904.	Receipts during quarter.	Transfers to funds.	Transfer from funds.	Warrants drawn.	Balances May 31, 1904.
Weather bureau	\$989.71		\$29.91		\$261.50	\$758.12
Solicitor-general, contin- gent expenses	27.10					27.10
Superintendent public in- struction:						
Rent	5.33					5.33
Contingent expenses	341.27		59.82		353.40	47.69
Treasurer's contingent ex- pense	606.73		59.82		211.64	454.91
Governor's contingent ex- pense	821.87		119.65		666.64	274.88
Printing tax books	1,149.54		101.70		1,149.54	101.70
Transportation of convicts	1,857.11		290.14		2,156.25	
Printing poll books	937.89		71.79			1,009.68
Furnishing normal school, Silver City	95.94					95.94
Reimbursing public land board	2,903.77				456.00	2,447.77
University of New Mexico income		\$200.00			200.00	
Agricultural college in- come		215.04				215.04
Normal school:						
Silver City, income	594.88	64.87				659.75
Las Vegas, income		64.88				64.88
School of mines income	183.59	54.75				238.34
Military institute income	222.19	71.36				293.55
Reform school income	583.58	48.00				631.58
Blind asylum income	173.54	104.30				277.84
Deaf and dumb asylum in- come	324.74	54.75			324.74	54.75
Miners' hospital income	692.81	100.86				793.67
Insane asylum income	66.75				66.75	
Penitentiary income	159.82	48.19			75.97	132.04
Water reservoir:						
Income		439.29				439.29
Permanent	60.00					60.00
Improvement Rio Grande income	65.59			\$8.55	564.80	32.24
Territorial purposes, fifty- fourth fiscal year		1,321.83		1,250.54		71.29
Territorial institutions, fifty-fourth fiscal year		771.21		729.56		41.65
Charitable institutions, fifty-fourth fiscal year	335.97	129.94		429.55		36.36
Special purposes, fifty- fourth fiscal year	578.94	55.12				634.06
Compensation of assessors	2,014.38	747.74			740.15	2,021.97
Normal School, Silver City, permanent		1,140.00				1,140.00
Penitentiary permanent	6.31	960.00			953.98	12.33
Military institute, perma- nent	4,560.90	1,440.00		2,000.00		4,000.90
Agricultural college, perma- nent	6,594.07	4,420.00			11,014.07	
Blind asylum, permanent		2,133.38				2,133.38
Miners' hospital, permanent		1,880.00				1,880.00
Deaf and dumb asylum, perma- nent	1,920.00	960.00		960.00	1,920.00	
Geological survey	362.32	55.12				417.44
Southwestern and Interna- tional Express Co	63.29					63.29
Scenic Route	992.26				687.71	304.55
Sheep sanitary fund	4,227.68	350.75				4,578.43
Exposition fund, fifty- fourth fiscal year	1,310.17	88.12				1,398.29
United States land commis- sion	2,226.33		6,500.00		1,908.65	6,817.68
Cattle indemnity fund	8,211.92	4,420.21				12,632.13
Reform school, permanent	12,855.07					12,855.07
Maintenance board, public lands	4,612.58				1,101.18	3,511.40
Interest on deposits	469.45	2,080.67			952.00	1,598.12
Capitol maintenance, special	.05					.05
Interest and sinking fund certificates of indebted- ness	21,706.77	1,080.05	4,713.24			27,500.06
School of mines, permanent		960.00		960.00		



STATEMENT F.—*Quarterly statement covering the second quarter of the fifty-fifth fiscal year, etc.—Continued.*

Fund or account.	Balances Mar. 1, 1904.	Receipts during quarter.	Transfers to funds.	Transfer from funds.	Warrants drawn.	Balances May 31, 1904.
Territorial purposes, fifty-fifth fiscal year		\$10,091.62	\$1,329.98	\$11,217.22		\$204.38
Territorial institutions, fifty-fifth fiscal year		4,386.40	67.53	4,280.25		173.68
Charitable institutions, fifty-fifth fiscal year		695.88	10.73	449.30		257.31
Louisiana Purchase Exposition, fifty-fifth fiscal year		11,015.94	7.95			19,769.02
Provisional indebtedness sinking fund	37,803.13	540.08	6.62			38,349.83
Miners' hospital	1,460.05		83.93			1,543.98
Blind asylum	1,856.66		83.92			940.58
Reform school	1,460.05		83.93		\$1,000.00	543.98
Capitol building bond sinking fund	151,966.96	1,619.70	19.86			153,606.52
Normal university, Las Vegas, permanent		1,140.00		1,000.00		140.00
Casual deficit bonds		101,800.00				101,800.00
Total	455,481.35	169,594.69	31,151.49	31,151.49	98,559.22	526,516.82

## RECAPITULATION.

Balances March 1, 1904	\$455,481.35
Receipts during quarter	169,594.69
Total	625,076.04
Warrants drawn during quarter	98,559.22
Balance June 1, 1904	526,516.82

NOTE.—Payment of interest coupons, maturing bonded indebtedness, certificates of indebtedness, cattle indemnity and sheep sanitary funds, Pullman tax, and exposition funds are made direct by treasurer, and no warrants against these funds are drawn by auditor. Payments made from such funds are only charged against same in the office of the auditor at the time of the annual burning of warrants, the last occurring November 12, 1903.

STATEMENT G.—*Summary.*

Balance in hands of treasurer June 1, 1903	\$352,795.34
Receipts during third quarter, fifty-fourth fiscal year	\$218,873.20
Receipts during fourth quarter, fifty-fourth fiscal year	72,713.02
Receipts during first quarter, fifty-fifth fiscal year	281,782.44
Receipts during second quarter, fifty-fifth fiscal year	169,594.69
Total to be accounted for by treasurer	1,095,758.69
Warrants drawn by auditor during third quarter, fifty-fourth fiscal year	\$139,507.76
Warrants drawn by auditor during fourth quarter, fifty-fourth fiscal year	80,288.22
Warrants drawn by auditor during first quarter, fifty-fifth fiscal year	127,427.55
Warrants drawn by auditor during second quarter, fifty-fifth fiscal year	98,559.22
Paid direct by treasurer (see note)	123,459.12
Total balance in hands of treasurer June 1, 1904	526,516.82

NOTE.—Warrants against cattle indemnity fund, sheep sanitary fund, St. Louis Exposition fund, and Pullman tax fund are drawn direct on treasurer; also payment of maturing interest on bonded Territorial debt, the redemption of certificates of indebtedness with interest thereon, and the payments of any maturing Territorial bonded indebtedness are made direct by treasurer, and only charged up against these funds or accounts in the office of the auditor when the "annual burning of warrants" takes place, the last occurring November 12, 1903, and from which date no charges of payments made from such funds or accounts by treasurer have been made in the office of Territorial auditor.

STATEMENT H.—*Assessed valuation of the Territory for the years 1902 and 1903.*

Counties.	1902.				1903.			
	Assessed valuation.	Arith-metrical product.	Cash product.	Per cent collected.	Assessed valuation.	Arith-metrical product.	Cash product.	Per cent collected.
Bernalillo.....	\$3,893,585.00	\$54,471.25	\$37,975.74	69.7	\$2,905,850.00	\$45,137.78	\$21,963.40	48.6
Chaves.....	2,789,377.00	39,023.38	33,202.92	85.1	2,825,161.00	43,818.25	20,380.72	46.5
Colfax.....	2,798,074.00	39,145.06	34,367.67	87.8	2,841,011.00	44,064.08	21,885.33	49.6
Dona Ana.....	2,063,326.00	28,865.93	22,172.67	76.8	2,077,699.00	32,225.15	13,076.23	40.5
Eddy.....	1,858,049.00	25,994.11	23,587.26	90.7	1,848,079.00	28,663.70	12,774.89	44.5
Grant.....	2,826,735.30	39,546.02	34,968.56	88.4	2,836,377.00	43,992.21	20,048.81	45.5
Leonard.....								
Wood.....	1,187,882.40	16,618.48	8,328.19	50.1	870,070.00	13,494.78	3,369.03	24.9
Lincoln.....	1,162,340.40	16,261.14	13,902.84	85.5	1,268,802.00	19,679.11	7,523.24	38.2
Luna.....	1,396,673.65	19,539.46	17,641.22	90.2	1,468,691.90	22,779.38	10,517.60	46.1
Mora.....	960,015.00	13,430.60	9,572.41	71.6	1,102,063.00	17,062.99	5,553.14	32.4
McKinley.....	957,361.00	13,393.49	10,606.25	74.7	941,150.00	14,520.32	6,621.00	45.5
Otero.....	1,199,429.51	16,780.01	15,523.88	92.5	1,455,425.00	22,573.64	9,351.95	41.4
Rio Arriba.....	834,681.00	11,677.19	7,795.10	66.7	900,993.00	13,974.40	5,898.30	42.2
San Juan.....	530,240.00	7,418.06	5,861.56	79.0	594,506.00	9,218.18	3,907.97	42.8
San Miguel.....	4,368,200.00	61,111.12	38,194.82	62.4	4,541,713.00	70,441.96	21,522.32	30.5
Santa Fe.....	2,037,390.00	28,503.09	17,728.49	62.2	2,040,517.00	31,648.42	9,812.77	31.0
Sierra.....	1,476,827.80	20,660.81	16,103.74	77.9	1,254,791.45	18,583.56	8,876.85	47.7
Socorro.....	1,959,740.00	27,416.77	18,942.75	77.1	1,945,010.00	30,167.10	12,532.80	41.5
Taos.....	591,746.00	8,278.53	6,290.50	76.0	578,820.00	8,977.49	3,883.96	43.2
Union.....	1,931,210.00	27,017.63	23,378.81	86.5	1,947,250.00	30,201.84	11,783.11	39.0
Valencia.....	1,811,110.61	25,337.43	13,924.41	54.9	1,325,247.00	20,554.59	8,407.20	40.9
Quay.....			974.82	-----			11,249.67	2,875.95
Roosevelt.....			2,354.62	-----			8,796.08	4,077.81
Sandoval.....			534.28	-----			11,406.90	3,802.17
Total.....	38,633,993.27	540,489.56	413,933.51	76.6	39,596,951.79	613,261.58	250,446.55	40.8
Tax levies ..	13.99 mills.				15.51 mills.			

NOTE.—By acts of the legislature, 1903, the counties of Quay, Roosevelt, and Sandoval were created, Quay being segregated from Guadalupe and Union, Roosevelt from Guadalupe and Chaves, and Sandoval from Bernalillo. By an act of the same legislature the name of the county of Guadalupe was changed to that of Leonard Wood. Collection of taxes for year 1903 includes collections only on account of first half.

STATEMENT I.—Statement showing the business done in the Territory of New Mexico by fire, life, and miscellaneous insurance companies during the year ending December 31, 1903.

## LIFE INSURANCE COMPANIES.

	Location of principal office.	Amount of policies in force Dec. 31, 1903.	Number of policies in force Dec. 31, 1903.	Number of policies issued during 1903.	Amount of policies issued during 1903.	Losses incurred during 1903.	Losses paid during 1903.	Amount of premiums received during 1903.	Policies ceased during year ending 1903.
Ætna Life Insurance Co.	Hartford, Conn.	\$210,844.00	46	39	\$195,000.00			\$8,691.46	\$76.00
Conservative Life Insurance Co.	Los Angeles, Cal.	2,328,463.00	968	185	445,749.00	\$19,240.00	\$17,740.00	69,455.11	304,028.00
Equitable Life Insurance Co.	New York, N. Y.	39,400.00	15	2	2,000.00			1,125.50	
Hartford Life Insurance Co.	Hartford, Conn.	527,881.00	271	64	106,600.00	9,510.14	5,510.14	22,470.61	138,350.00
Germania Life Insurance Co.	New York, N. Y.	44,120.00	25	18	34,670.00	1,000.00	1,000.00	1,567.53	23,050.00
Manhattan Life Insurance Co.	do	9,719.00	4						
Mutual Benefit Life Insurance Co.	Newark, N. J.								
Mutual Life Insurance Co.	New York, N. Y.	4,417,971.00	1,785	485	947,348.00	44,670.00	58,232.73	141,136.15	494,570.00
Missouri State Life Insurance Co.	St. Louis, Mo.								
Northwestern Life and Savings Insurance Co.	Des Moines, Iowa								
National Life Insurance Co. of United States of America.	Chicago, Ill.	156,000.00	170	184	172,300.00			3,466.92	16,300.00
New York Life Insurance Co.	New York, N. Y.	4,478,817.00	1,567	256	572,140.00	59,658.28	59,702.73	142,135.09	417,470.00
Northwestern Mutual Life Insurance Co.	Milwaukee, Wis.	657,450.08	259	17	23,500.00	3,000.00	3,000.00	18,574.45	1,876.00
Northwestern National Life Insurance Co.	Minneapolis, Minn.	3,500.00		7	3,500.00			194.79	
Ocean Accident and Guaranty Insurance Co.	New York, N. Y.								
Penn. Mutual Life Insurance Co.	Philadelphia, Pa.								
Provident Savings Life Insurance Co.	New York, N. Y.	367,847.00	107	66	229,682.00			9,841.81	98,152.00
Pacific Mutual Life Insurance Co.	San Francisco, Cal.	35,558.00	16	2	2,000.00			1,018.50	6,642.00
Reliance Life Insurance Co.	Pittsburg, Pa.								
State Life Insurance Co.	Indianapolis, Ind.	586,500.00	195	128	261,500.00			17,397.61	59,000.00
Security Mutual Life Insurance Co.	Binghamton, N. Y.								
Security Trust and Life Insurance Co.	New York, N. Y.	8,158.00	7	2	1,158.00	1,437.69		587.94	4,536.00
Standard Life and Accident Insurance Co.	Detroit, Mich.								
Travelers Life Insurance Co.	Hartford, Conn.	53,382.00	28	1	1,000.00	747.16	747.16	4,264.27	16,000.00
Union Mutual Life Insurance Co.	Portland, Me.	273,331.74	158	19	31,088.72			8,520.24	
Union Central Life Insurance Co.	Cincinnati, Ohio.	801,426.00	345	145	297,039.00	11,000.00	11,000.00	48,228.43	178,750.00
United States Health and Accident Insurance Co.	Saginaw, Mich.								
Washington Life Insurance Co.	New York, N. Y.	577,151.00	270	182	399,090.00	4,000.00	4,000.00	24,574.75	321,471.00



STATEMENT I.—*Showing the business done in the Territory of New Mexico by fire, life, and miscellaneous insurance companies, etc.*—Cont'd.

## FIRE INSURANCE COMPANIES.

	Location of principal office.	Amount of risks written 1903.	Losses incurred during 1903.	Losses paid during 1903.	Premiums received during 1903.
Ætna Fire Insurance Co.....	Hartford, Conn.	\$418,581.00	\$1,879.77	\$1,473.42	\$8,292.37
Atlas Assurance Co.....	Chicago, Ill.	501,246.00	9,228.28	2,753.24	10,245.10
American Central Fire Insurance Co.....	St. Louis, Mo.	442,246.00	5,507.02	1,715.28	8,822.26
British America Assurance Co.....	Toronto, Canada	704,329.00	4,138.04	3,532.45	13,471.06
Continental Insurance Co.....	New York, N. Y.	306,783.00	1,662.11	2,812.11	5,827.35
Fire Association of Philadelphia.....	Philadelphia, Pa.	467,401.00	5,392.81	5,274.00	12,323.00
Fireman's Fund Insurance Co.....	San Francisco, Cal.	1,601,273.00	25,801.25	12,559.13	33,835.66
German American Fire Insurance Co.....	New York, N. Y.	714,293.06	4,371.75	3,094.52	10,068.87
Hartford Fire Insurance Co.....	Hartford, Conn.	1,434,199.00	8,237.00	8,520.00	28,665.00
Insurance Company of North America.....	Philadelphia, Pa.	1,223,683.00	8,790.74	7,835.04	15,893.70
Liverpool and London and Globe Insurance Co.....	New York, N. Y.	1,864,918.00	10,577.71	11,577.71	24,507.46
London and Lancashire Fire Insurance Co.....	do	417,710.00	1,394.83	2,214.83	4,100.30
National Fire Insurance Co.....	Hartford, Conn.	359,000.00	3,478.28	2,862.73	7,135.39
Northern Assurance Co.....	do	912,881.58	9,720.90	5,171.58	18,153.33
Norwich Union Fire Insurance Society.....	New York, N. Y.	362,743.00	4,234.97	4,233.61	8,609.11
Niagara Fire Insurance Co.....	do	532,640.00	7,672.51	3,002.25	11,367.09
Orient Fire Insurance Co.....	Hartford, Conn.	617,300.00	6,696.46	4,369.87	13,037.11
Palatine Insurance Co., Limited.....	New York, N. Y.	313,925.00	4,090.01	1,600.01	6,603.00
Scottish Union and National Fire Insurance Co.....	Hartford, Conn.	719,877.00	4,939.09	5,749.09	13,541.23
St. Paul Fire and Marine Insurance Co.....	St. Paul, Minn.	567,371.00	15,311.29	13,481.84	12,525.32
Springfield Fire and Marine Insurance Co.....	Springfield, Mass.	477,043.00	4,992.94	5,002.42	7,759.28
Royal Fire Insurance Co.....	New York, N. Y.	1,249,996.00	9,713.58	8,802.88	20,748.89
		1,260,448.00	17,659.12	11,614.12	25,993.54

## MISCELLANEOUS INSURANCE COMPANIES.

	Location of principal office.	Premiums received during 1903.	Losses incurred during 1903.	Losses paid during 1903.
American Bonding Co.....	Baltimore, Md.	\$1,165.30	---	---
American Surety Company of New York.....	New York, N. Y.	945.60	\$7,678.82	---
Continental Casualty Co.....	Hammond, Ind.	20,189.24	10,816.20	\$12,394.20
Fidelity and Casualty Co.....	New York, N. Y.	285.62	---	---
Fidelity and Deposit Co.....	Baltimore, Md.	410.43	---	---
Lloyds Plate Glass Insurance Co.....	New York, N. Y.	994.54	473.63	511.54
Metropolitan Plate Glass Insurance Co.....	do	1,056.64	117.25	117.25
New York Plate Glass Insurance Co.....	do	79.66	60.00	---
United States Fidelity and Guaranty Co.....	Baltimore, Md.	2,737.26	---	---
Pacific Mutual Insurance Co.....	San Francisco, Cal.	14,488.49	9,398.06	9,398.06

STATEMENT J.—*Report of the Pullman Company.*

In accordance with the provisions of section 4 of an act of the Territorial legislature entitled "An act to regulate the manner of taxing sleeping car and other companies," approved February 23, 1893, the Pullman Company, by its secretary, A. S. Weinsheimer, submits the following report, as of March 1, 1904.

The total number of cars operated by said company in the Territory of New Mexico for the year ending March 1, 1904, was 30.

The names of the counties through which said cars were run and the number of miles in each county are:

	Miles.
Bernalillo County.....	30
Chaves County.....	57
Colfax County.....	58
Dona Ana County.....	137
Grant County.....	55
Lincoln County.....	76
Luna County.....	94
McKinley County.....	71
Mora County.....	42
Otero County.....	102
Quay County.....	42
Roosevelt County.....	54
Sandoval County.....	31
San Miguel County.....	70
Santa Fe County.....	41
Sierra County.....	50
Socorro County.....	87
Union County.....	117
Valencia County.....	133
Leonard Wood County.....	84
Total .....	1,431

The number and kinds of cars so run and operated were as follows: Standard sleepers, 19; tourist cars, 11.

The gross earnings received from the use of such cars between points in the Territory of New Mexico during the year ending March 1, 1904, were \$16,430. Tax on the above earnings at  $2\frac{1}{2}$  per cent, \$410.75.

## STATEMENT K.—Statement of Walls, Fargo &amp; Co.'s Territorial intrastate business in New Mexico, April 1, 1903, to March 31, 1904.

County.	Office.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Bernalillo	Albuquerque	\$344.60	\$285.50	\$311.15	\$458.70	\$341.65	\$327.85	\$339.20	\$345.41	\$373.93	\$261.20	\$256.41	\$327.40
	Isleta	9.17	14.15	18.12	18.59	34.50	23.70	13.60	13.17	14.05	11.18	10.60	15.45
Chaves	Hagerman	40.40	63.00	70.35	62.38	61.82	40.95	26.82	16.34	20.70	28.48	17.05	21.35
	Roswell	81.35	58.78	86.45	114.18	123.67	107.62	65.75	78.50	107.54	60.54	62.57	63.10
Colfax	Dawson	23.25	25.69	19.45	15.40	36.45	28.30	38.30	37.21	35.85	19.14	36.40	64.75
	Dillon	3.10	1.95	1.75	4.95	7.32	5.50	2.55	1.35	1.60	3.00	1.80	4.85
	French	3.65	14.70	6.25	8.40	9.69	7.90	4.65	3.50	3.75	4.28	9.82	5.55
	Hebron	8.30	23.80	29.40	33.45	48.28	36.75	17.05	2.85	5.25	6.20	6.77	9.45
	Maxwell City	6.65	6.95	7.20	13.45	48.28	17.50	4.83	7.83	11.80	72.30	45.75	68.30
	Raton	73.15	90.75	109.60	183.85	195.35	104.25	95.50	79.20	88.45	72.30	45.75	68.30
	Springer	76.36	66.50	88.13	139.75	89.95	97.00	118.06	57.48	82.26	36.88	48.17	37.10
	Hatch	1.95	1.76	3.35	5.20	1.65	2.95	2.05	3.15	2.80	35.25	34.55	10.50
	Las Cruces	37.45	37.90	62.20	21.35	33.35	42.78	40.80	38.61	47.78	35.25	34.55	10.50
	Mesilla	8.90	12.65	3.15	11.50	7.95	17.70	9.60	26.98	15.95	17.15	17.15	26.32
	Rincon	13.20	11.05	31.20	28.95	7.95	23.40	18.73	21.63	32.86	18.73	23.61	3.60
	Vado	1.20	1.35	1.90	1.75	6.30	1.90	4.95	6.55	3.30	3.25	2.40	2.80
Eddy	Carlsbad	75.45	92.90	85.10	115.37	110.25	98.95	71.55	58.24	87.06	47.10	95.67	74.59
	Florence	6.10	6.50	6.05	17.75	6.35	6.36	2.15	.75	1.05	1.20	1.20	1.15
	Bayard	11.40	8.60	9.10	17.75	4.05	4.35	20.50	2.60	18.30	1.85	7.40	3.60
	Fierro	11.40	4.35	3.70	11.40	15.68	9.45	8.15	16.35	8.65	9.60	2.50	3.30
	Lordsburg	25.85	7.50	12.30	86.65	169.00	26.90	30.35	72.75	33.65	25.35	28.10	50.35
	Santa Rita	11.40	10.65	38.75	40.65	9.72	4.35	13.25	11.80	13.80	11.80	6.80	5.30
	Sepul	.55		2.45	1.80	.75	.60	.65		1.85	.75	1.75	.80
	Silver City	53.40	64.30	69.40	115.80	65.40	100.22	102.45	76.35	79.65	51.60	80.08	121.35
	Stebins Pass	2.40	2.85	3.55	4.40	4.20	3.00	2.10	6.30	3.05	4.15	1.75	4.55
	White Water	9.10	19.60	8.15	4.20	7.80	2.45	5.75	4.85	4.10	7.80	4.55	5.95
Leonard Wood	Pastura	4.85	5.53	4.60	5.70	7.35	2.65	10.30	7.60	6.05	5.25	7.60	11.09
	Santa Rosa	14.80	45.30	32.67	26.50	52.30	3.20	27.20	15.00	10.15	17.55	17.55	17.25
Lincoln	Ancho	4.50	10.60	1.45	5.80	10.00	4.75	4.80	4.00	5.50	4.85	1.95	3.90
	Capitan	8.40	4.55	4.80	19.95	40.60	43.65	41.38					
	Coalora												
	Carriazo	21.10	22.75	29.32	46.90	71.74	9.75	5.30	24.25	12.80	10.25	11.90	19.60
	Corona	21.40	14.06	7.31	14.30	21.65	12.05	9.95	4.85	7.90	9.95	7.90	5.90
	Oscura	6.15	4.30	3.85	8.10	7.80	8.15	6.05	9.45	9.35	4.15	3.72	3.70
	Torrance	205.00	300.00	142.30	201.15	98.00	14.35	13.25	2.05	5.55	3.10	2.70	11.20
	Valencia	1.35	1.90	2.40					42.20	13.40	28.30	12.32	12.20
Luna	Deming	68.30	55.15	47.00	62.35	64.03	51.03	48.40	37.73	58.32	33.70	41.20	32.95
	Florida	5.50	4.35	7.20	6.40	5.00	1.20	2.45	8.50	6.00			
	Nutt	1.05	.25	1.55		1.83		7.15	.35	2.65	3.25	.80	.25
McKinley	Gallup	240.11	385.75	415.75	415.20	429.40	412.60	394.75	445.26	341.56	281.42	269.45	394.25
	Manuelito	8.95	8.95	6.15	3.40	2.75	16.35	4.70	5.45	5.10	5.40	1.50	4.15
	Fort Wingate	71.30	68.45	41.15	52.60	12.05	41.10	12.65	30.10	16.85	12.40	18.30	17.35
	Roy				4.90	28.90	25.80	35.00	16.95	10.95	13.90	8.75	15.75
Mora	Wagon Mound	27.00	26.56	15.73	43.90	90.25	62.30	95.00	12.30	15.55	12.75	115.46	13.50
	Watrous	35.60	39.07	68.42	82.53	124.40	95.72	52.00	41.71	49.08	38.28	20.20	28.85



Otero	Alamogordo	78.38	94.73	147.17	126.68	199.08	124.20	139.15	92.55	110.70	77.15	112.50	127.45
	Cloudcroft	1.85	6.95	16.00	20.75	13.10	12.50	9.70	9.35	17.90	4.60	5.25	8.85
	Heald	1.95	3.65	16.00	3.15	3.25	7.30	7.75	1.00	3.35	4.35	1.15	1.40
	Parilla Junction	1.40	5.20	11.70	3.15	3.35	21.35	3.80	2.00	2.70	4.30	4.35	3.45
	Tularosa	10.15	11.15	9.35	19.00	13.45	15.35	10.35	8.30	5.40	2.30	4.65	12.30
	Tucuman				7.25	6.95	7.40	14.65	11.50	22.54	51.44	27.32	26.95
Quay	Petaluma	24.06	28.01	32.18	28.75	29.00	7.40	6.30	8.75	8.40	9.75	7.80	8.30
Roosevelt	Bernalillo	22.55	33.15	31.75	61.95	71.10	45.25	18.95	19.85	22.40	10.55	12.45	11.85
Sandoval	Thornton	19.00	16.75	13.50	23.20	20.07	17.05	13.65	15.25	13.30	15.10	7.35	16.30
	Fulton	4.55	2.05	3.65	1.40	5.10	4.50	2.84	2.65	4.00	1.45	1.35	1.88
San Miguel	Las Vegas	162.18	165.37	172.45	378.95	528.99	622.08	352.62	118.84	123.50	76.52	107.44	120.89
	Ribera	8.75	10.10	11.25	5.20	8.00	13.35	6.15	8.95	8.25	29.35	14.30	8.35
	Rowe	32.18	20.05	19.20	19.85	14.55	21.75	11.75	12.40	12.05	29.35	9.45	8.65
Santa Fe	Cerrillos	50.55	48.20	31.25	42.80	27.60	31.25	47.50	31.25	49.25	31.25	27.50	27.45
	Glorieta	12.30	16.50	17.00	17.54	36.10	17.75	18.30	27.30	26.08	13.25	5.30	3.65
	Kennedy						4.75	5.60	6.50	14.75	7.20	5.60	3.70
	Lamy	22.20	28.09	19.10	17.65	19.30	12.55	7.10	12.05	7.55	8.55	8.55	12.00
	Moriarty						9.15	4.55	3.45				
	Santa Fe	280.90	235.87	204.03	298.02	291.05	295.00	211.15	189.53	274.75	226.01	183.90	216.27
	Waldo	64.50	63.95	23.65	78.85	68.90	67.20	62.15	37.70	45.65	37.33	37.40	65.20
Sierra	Engle	10.05	8.25	16.10	16.40	19.25	10.20	12.55	13.15	27.42	20.20	10.05	14.85
	Lake Valley	13.90	11.40	14.00	27.60	25.02	18.55	20.30	20.15	40.90	12.85	19.35	18.30
	La Joya	2.10	6.25		2.15	1.15	2.15	2.15	4.95	3.65	3.60	1.50	2.60
Socorro	Magdalena	62.08	70.27	74.29	108.46	98.00	81.90	62.80	88.98	71.43	52.77	53.30	69.95
	San Antonio	36.05	31.25	52.15	45.85	46.55	35.50	29.85	26.20	37.15	27.00	28.40	27.75
	San Marcial	50.24	45.55	36.20	70.46	55.08	53.28	36.40	60.87	38.40	29.37	28.20	37.00
	Socorro	59.65	90.00	64.20	49.90	51.50	44.80	58.35	58.85	72.37	43.90	65.40	63.20
Union	Clayton	7.25	7.65	6.35	7.85	12.75	6.85	10.15	7.35	9.65	5.60	7.10	6.05
	Folsom	2.70	6.35	5.35		2.75	1.10	2.15	6.00	2.40	6.10	5.50	6.90
Valencia	Belen	297.60	271.40	290.65	304.10	184.40	181.60	78.60	58.60	74.85	58.60	49.75	69.50
	Esencia				2.16	8.60	8.33	41.35	10.25	28.55	10.00	49.75	7.40
	Grants	22.90	19.70	39.15	63.86	58.70	26.75	21.95	35.00	36.65	15.50	28.72	24.45
	Laguna	17.20	14.65	14.05	70.65	49.12	34.95	30.35	34.45	30.65	13.65	22.70	24.45
	Los Lunas	27.25	30.30	37.15	45.85	26.45	31.15	29.40	31.00	21.15	23.26	14.50	16.80
	Morro	16.80	5.50	3.90	8.45	3.05	3.55	3.15	10.45	1.50	1.45	12.80	16.80
	Duran												
Socorro	Lava	.30											
Total		3,130.21	3,352.61	3,403.72	4,525.86	4,490.33	3,905.82	3,118.58	2,638.64	2,913.13	2,169.19	2,282.55	2,613.34

Total intrastate business, April 1, 1903, to March 31, 1904.

Total amount paid railway companies for transportation, April 1, 1903, to March 31, 1904.

Amount paid railway companies in excess of revenue earned for that period.

\$28,598.98

110,111.05

71,512.07

## OFFICE OF THE TRAVELING AUDITOR.

[CHARLES V. GAFFORD, *Traveling Auditor.*]

The past twelve months have been a very busy year for the office of the traveling auditor and State bank examiner.

All the counties have been visited as required by law and the accounts of county officials handling public moneys have been thoroughly checked and settlements made with such officials. The result of this supervision has been highly satisfactory—a comparison for the year ending June 30, 1904, with the year ending June 30, 1903, shows a decided increase in revenue from taxation purposes, both as to Territorial and county funds. This is also true with reference to the collection of and accounting for municipal, school, and other special taxes, licenses, and all other miscellaneous receipts.

This good showing is largely accounted for from the fact that the tax rolls made a year ago were made under the supervision of the auditor, and although for that year, owing to lack of time, between the time of the creation of the office and the time for making the assessment over the Territory was short, the rolls were returned in much better condition than for any prior year. The result was that collectors were able to make much closer collections.

There have been several shortages or defaults in some of the counties during the past year, but these have been almost immediately detected and prompt action taken to prevent loss to either the Territory or counties. At this date the Territory has but \$400 of such defaults unsettled, and this trifling sum will be paid to the treasurer immediately.

The best evidence as to the financial improvement of the Territory is the fact that Territorial levies for the year 1904 have been reduced something over 10 per cent and in many of the counties corresponding reductions have been made in county and municipal tax rates.

The assessment for the present year, while not yet officially in this office, will show something of an increase in nearly all of the counties of the Territory, notwithstanding the unfavorable season, which has caused more or less loss, especially in the stock interests, but with the same close collection of taxes and faithful accounting for all public moneys as has been the case during the past year I have no hesitation in predicting further decreases in tax levies for the year 1905.

The financial condition of the Territory was never better and with one or two exceptions all of the counties of the Territory are in excellent shape, no floating debt, interest on bonded debt promptly paid when due, and sufficiently large cash balances on hand to meet all necessary running expenses. This is especially true with reference to school funds. In all cases where county bonds have been refunded during the past year it has been accomplished at lower interest rates, showing healthy financial condition.

The Territorial banks have been examined as required by law, as far as time would permit, and are without exception in good solvent condition. No failures during the past year have occurred. No new banks have been established, but on the other hand two Territorial institutions have surrendered their charters and reorganized as national banks.

Following is a tabulated statement of our Territorial banking institutions:

*Territorial banks.*

Name and location.	Resources.				
	Loans and discounts.	Bonds and stocks.	Bank building and real estate.	Cash and sight exchange.	Aggregate.
Andrew Morton, Springer.....	\$18,511.40	-----	\$1,740.00	\$23,802.10	\$44,053.50
Bank of Deming, Deming.....	145,333.00	-----	7,958.00	42,240.82	195,531.82
Bank of Commerce, Albuquerque..	777,202.20	-----	13,124.45	334,282.35	1,124,609.00
Exchange Bank, White Oaks.....	63,577.57	-----	1,578.04	46,862.28	112,017.89
Bank of Portales, Portales.....	28,130.51	-----	7,482.27	11,765.91	47,378.69
Plaza Trust and Savings, Las Vegas.	38,985.10	\$9,500.00	4,436.70	25,114.67	72,036.47
Sierra County Bank, Hillsboro.....	139,209.56	-----	2,580.00	71,529.95	213,409.51
J. N. Broyles, San Marcial.....	7,000.00	-----	50,000.00	4,500.00	61,500.00
Las Vegas Savings Bank, Las Vegas.	102,189.15	-----	5,000.00	35,660.78	142,849.93
Silver City Savings Bank, Silver City.....	33,380.00	18,783.75	-----	6,290.03	58,453.78
Total.....	1,353,608.49	22,283.75	93,899.46	602,048.89	2,071,840.59

Name and location.	Liabilities.		
	Capital stock.	Surplus and profits.	Deposits.
Andrew Morton, Springer.....	\$5,000.00	\$2,288.41	\$36,765.09
Bank of Deming, Deming.....	30,000.00	10,287.90	155,243.92
Bank of Commerce, Albuquerque..	72,400.00	51,326.91	1,000,882.09
Exchange Bank, White Oaks.....	30,000.00	5,838.15	76,179.74
Bank of Portales, Portales.....	30,000.00	1,972.66	15,406.03
Plaza Trust and Savings, Las Vegas	15,000.00	1,630.15	55,406.32
Sierra County Bank, Hillsboro.....	30,000.00	2,398.75	181,010.76
J. N. Broyles, San Marcial.....	20,000.00	20,000.00	21,500.07
Las Vegas Savings Bank, Las Vegas	30,000.00	2,348.60	110,501.30
Silver City Savings Bank, Silver City	15,000.00	102.91	43,350.83
Total.....	277,400.00	98,194.44	1,696,246.15

**GAME AND FISH WARDEN.**

[PAGE B. OTERO.]

The advantages which nature has so liberally bestowed upon New Mexico in the way of magnificent mountain ranges and numerous beautiful streams and lakes should, with the wise enactment of practical laws looking to the preservation of our game and fish, prove a great source of revenue. Sportsmen who select this field for hunting and fishing would leave usually more than the value of the game they take away, especially if a uniform license were charged.

Other States and Territories realize the importance of protecting and preserving their game and fish, and are making every effort to improve their condition in this respect.

The success or failure of officials to enforce our game and fish laws depends largely upon public sentiment, and while there is a growing better sentiment in many localities of our Territory, and little difficulty is met in securing conviction upon proof of guilt, there is still in some portions of our game and fish districts a decided prejudice against the prosecution of violators, even when the evidence of guilt is conclusive, partly due, no doubt, to the fact that the people have not yet realized that what they have always considered to be a legitimate right is not being arbitrarily taken away from them.



While more arrests and convictions for game and fish law violations have been made during the past year than during the entire former history of this department, still, as I have stated in my previous report, it is very difficult to obtain the services of suitable men to act as deputy wardens on account of the insufficient compensation connected therewith, there being no money appropriated for compensating a deputy other than the fines collected from successful convictions. On the theory that those who hunt and fish should pay all or a large share of the cost of preserving the game and fish, instead of burdening the general taxpayers, I again urge the necessity of enacting a law licensing hunters as follows: Resident hunters, large game (deer), \$8 per season; small game (birds), \$1 for the first day and 50 cents for each succeeding day. Nonresident general hunting license, \$25 per season. In this way we would create a fund out of which deputies might be paid a stipulated salary and be in a position to dictate as to the kind of men to employ and insist upon their doing their full duty.

During the year just passed there have been five arrests made, all resulting in convictions—three in Grant, Sierra, and Luna counties, and two in San Miguel County—and the lesson seems to have had the proper effect, for, while it has so far been difficult to obtain regular reports from deputies, the few notices of violations of the law coming to this office from other sources are from parties not considered responsible.

While it is not to be expected that everything will be saved, still, with a few changes in the present law and a proper system of enforcing the same, I have no doubt that the improvement in all conditions would be plainly noticeable.

The slaughter of deer by the Apache, Navaho, and Pueblo Indian tribes, who make their raids from their reservations each fall (and at other times), has done more than all other agencies combined to reduce the number of our deer and antelope herds. I have frequently notified the Indian agents, likewise their attorney in New Mexico, to see that these Indians are not permitted to indulge in these annual raids, but with only moderate success. Last October I visited Taos, and, in an interview with one of the Apache chiefs, who was there with 37 of his tribe, informed him that I would not permit them to do any hunting while there. They went back to their reservation next day.

Since my last report I have appointed 35 additional deputies in different counties, making the total of those now in service 82. This number includes all Government forest rangers, who have been doing excellent work.

Last summer I spent about two months in the Santa Fe, Taos, and Mora ranges, part of the time in company with Mr. Vernon Bailey, chief field naturalist of the United States Biological Survey. Evidence of the existence of mountain sheep were found at an altitude of 12,600 to 13,000 feet on the Truchas Peaks. White-tail deer, formerly so numerous in that locality, were very scarce, only one buck, at an altitude of 11,600 feet, and a solitary doe, at about 9,000 feet, were seen. A recent report informs me that this species is again coming in.

I visited Sierra County last December and found that antelope were more numerous than for some years previous.

Owing to the unusually dry season just passed, our trout streams are in very poor condition, one, Cow Creek, in the Pecos Range, formerly a beautiful little trout stream, having gone completely dry.

Last winter I collected and sent to Mr. B. S. Rodey, Delegate in Congress from this Territory, all available data to enable him to introduce a bill to provide the Territory with a fish hatchery as a convenient means of keeping our streams and lakes well and constantly stocked with fish. Mr. Rodey introduced H. R. 5665 for that purpose and the bill is still pending.

In conclusion I beg to state that, while general conditions have greatly improved during the past year, still there is plenty of room for further improvement. With absolute prohibition on elk, antelope, and mountain sheep for some years to come, closed seasons on all of our game animals, birds, and fish, and the proper means of rigidly enforcing the law, New Mexico would soon advertise itself as a sportsman's paradise not excelled by any other State or Territory in the Union, and with proper license laws this condition could be kept up without any additional burden upon the general taxpayer.

#### THE NATIONAL GUARD.

[W. H. WHITEMAN, *Adjutant-General*.]

The guard is composed of five companies of infantry and one troop of cavalry, aggregating about 325 officers and enlisted men. The stations of the organizations are: Company A, Las Cruces; Company D, Silver City; companies E and G, Albuquerque; Company F, Santa Fe; Troop A of the First Cavalry, Las Vegas. Company A, at Las Cruces, is in a partially disorganized condition, owing to the fact that the captain of the company has resigned and the second lieutenant has left the Territory, and I have not yet found suitable officers to take their places. It is hoped that in a short time this company may be placed on a solid footing, with competent and efficient officers, and be able to take its place with the other companies of the First Regiment of Infantry and become a credit to the guard and to the Territory. The other companies and the troop of cavalry are in good condition and growing in efficiency. The organizations are armed with United States magazine rifles and carbines, with necessary accouterments, are well uniformed, and equipped with tentage and camp equipage of every description.

Companies D, E, F, and G of the First Regiment of Infantry and Troop A of the First Squadron of Cavalry held an encampment in Camp Otero, near Las Vegas, from August 8 to 15, which was greatly enjoyed by officers and men. The camp was a delightful one. The weather proved fine throughout, and the good health of officers and men through the entire encampment demonstrated the wisdom used in the selection of the camp site and the means employed to produce sanitary conditions as near perfect as could be expected in the first encampment of the New Mexico Militia. There were a few complaints of diarrhea, which the surgeons attributed to too vigorous drill and exercise in the sun, to which many were unaccustomed. The daily routine of camp duty, drill, and maneuvers was strenuous, and kept officers and men employed during the most of the day, and was sufficient to bring sound repose at night. The improvement



made by the men in the short period of the encampment in drill and soldierly bearing was quite marked, and it was a matter of regret upon the part of everyone that the encampment could not have continued for one week longer, which additional time would have fitted the men for active duty in the field. The infractions of discipline were few and of a minor character, and, considering that it was the first time the men had been brought under the strict military discipline of camp life, their conduct was remarkably good. Not a single case of intoxication was brought to my attention.

We were fortunate in having with us as the representative of the War Department Capt. S. P. Vestal, Seventh U. S. Cavalry, whose considerate judgment and good sense commended him to all. His attitude throughout was that of a patient, considerate instructor of officers and men in their military duties. He called attention to mistakes made in a way that gave no offense, and tactfully suggested the proper way, with explanations that carried to all the conviction of his accomplishments as a soldier and a gentleman and that they had been benefited by his presence.

At the opening of the encampment we had on hand of the Territorial appropriation for the support of the militia about \$60. The Government appropriation could only be used for the pay of officers and men, subsistence, and transportation. In mobilizing the militia in camp there are many little expenses incident thereto that could not be paid out of the allotment of the Government. We managed to crawl through some way, and without creating any indebtedness against the Territory. The Government allowance for subsistence is 20 cents per day per man, but on the 8th of August the men en route to the encampment were delayed by washouts, and I was compelled to furnish them meals at the eating houses along the way, at an expense largely in excess of 20 cents per day. The accounts of the expense of the encampment are not entirely made up, but I am of the opinion that, notwithstanding the unexpected expense of subsisting the men at eating houses on the 8th, the total expense for subsistence will come within the allowance. This seems a proper place for the suggestion that the Territory should not put the entire expense of maintaining the militia upon the Government. The benefits to the militia from their experience can not be questioned, but if an encampment is desired another year some provision should be made by the Territory to bear some share of the expense. The adjutant-general should not be compelled to indulge in such mean economies, to the inconvenience and discomfort of officers and men of the militia, who give such considerable time to the militia service, to the neglect of their own affairs. This is a matter that appeals to the legislative authority for larger appropriations. Either the militia should receive a decent support from the Territory or it should be disbanded.

The several organizations were inspected by Capt. W. S. Valentine, Fifth U. S. Cavalry, from April 21 to 27. But few and meager excerpts from the report of the inspecting officer have been furnished, but we have received sufficient to inform us that our organizations have much to learn of discipline and drill.

The reports of officers relating to the encampment will be submitted with my annual report in December.



## PART V—THE SCHOOLS.

### SUPERINTENDENT OF PUBLIC INSTRUCTION.

[J. FRANCO CHAVES, *Superintendent.*]

This report covers only the county public schools and does not include the higher Territorial institutions, private, or sectarian schools, the figures for which not being in my possession at this time.

School population, August 1, 1904	68, 400
Enrollment of pupils	39, 704
Increase during year	1, 732
Average daily attendance	29, 582
Increase during year	3, 517
Number of public schools	729
Increase during year	35
Number of teachers employed	852
Increase during year	59
Receipts from all sources	\$489, 308. 09
Increase during year	\$15, 039. 30
Expenditures	\$353, 012. 22
Increase during year	\$52, 480. 57
Cash on hand August 1, 1904	\$136, 295. 87
Value of public school property	\$824, 739. 95
Increase during year	\$108, 224. 86
Bonded indebtedness	\$287, 196. 00

This report is intended to cover the twelve months from August 1, 1903, to August 1, 1904, and the comparison of the figures is not made with those contained in my report to you of date September 9, 1903, but with those to be found in my report of December 31, 1903.

The showing herein made is certainly gratifying, especially in the increase of receipts and expenditures. The large amount of bonded indebtedness is also an encouraging indication of the disposition of the people of New Mexico to tax themselves for the erection of school buildings.

Reports from the higher Territorial institutions, city, private, and sectarian schools, are so incomplete that it is impossible for me to submit figures in regard to them. It is safe to say, however, that they are generally in a flourishing condition.

Following are reports from the various higher educational institutions of the Territory:

#### UNIVERSITY OF NEW MEXICO AT ALBUQUERQUE.

[W. G. Tight, president.]

The commencement exercises of May 27, 1904, closed a very satisfactory year in the history of the university. The enrollment for the year shows a very large increase over the previous year. The total enrollment in all the departments, not including members of the Chorus and Treble Clef Club of the school

of music, numbered 185. Two years ago there was not a student of college grade, but during the school year 1903-4, in spite of the fact that a year ago the preparatory course was lengthened from three to four years, there were 18 students of college rank distributed through the four years of the college course. While this fact is most encouraging, it will be apparent that the addition of these college classes has greatly increased the duties of the teachers, and some departments, notably those of Latin and Greek, modern languages, physics, and mathematics, must be assisted at an early date. There were 11 graduates from the several departments, distributed as follows:

Preparatory school.....	3
Normal school.....	2
Commercial school.....	2
College of letters and science.....	1
Music school.....	3

The character of the work done by the students was maintained at a high standard by the faculty and was pursued in a most satisfactory manner. The relations between the students and the faculty were most pleasant and harmonious.

Assembly exercises have been held regularly for a half hour every day during the year. These exercises on Mondays and Fridays consisted of the rhetorical work of the students. On Wednesdays the assembly was occupied by general instruction in music, under the direction of Prof. T. L. Krebs. Tuesdays and Thursdays were given to lectures by members of the faculty and persons of note from the outside. Among the latter should be mentioned addresses by ex-Governor E. S. Stover, ex-Governor Bradford L. Prince, Rabbi J. A. Kaplan, Rev. G. B. Powell; Dr. F. A. Parker, of Jacksonville, Ill.; Dr. Byron W. King, from the King School of Oratory at Pittsburg, and President E. J. Vert, of Las Vegas.

The college paper, *The U. N. M. Weekly*, was issued regularly by the students and was a credit to the editorial staff, and represented well the literary and journalistic attainments of the student body. It will compare favorably with the weekly papers of many institutions of learning which have many times the number of students.

Several gifts and prizes of minor value were presented to the university during the year. While these do not aggregate any great sum, they nevertheless serve to show that the university has many friends interested in its welfare and in that of the young men and women who are here obtaining their education. The work of the class room is most important, but the research done in the scientific laboratories has received a substantial recognition beyond the borders of the Territory. For the first time an effort has been made to extend the work and influence of the university beyond the class room and to the people of the Territory at large. This work is considered of primary importance by all the leading State universities. A State university should endeavor to make its educational influence felt through the masses of the people as well as the select few of the class room. The university extension work during the past year consisted of a series of lectures and entertainments given in some 14 of the principal towns in the Territory by the president and members of the faculty and some outside talent. This work has served to bring the work of the university very prominently before the people.

#### BUILDINGS.

The material equipment of the university has not been enlarged during the year. The present buildings include the administration hall, which is a large and commodious four-story brick building. The first floor contains the executive office and reading room, the library, and three large and well-furnished recitation rooms. The second floor contains four recitation rooms and two offices. The third floor is occupied by a large assembly room. The basement contains the heating and ventilating plants, janitor's rooms, and two large rooms now being used as ladies' and gentlemen's lunch rooms.

The Hadley climatological laboratory serves as the home for the science work of the university, and, as you are already aware from former reports, was presented to the university as a gift, largely contributed by Mrs. Walter Hadley, and was established for the exact purpose of investigating the climate of the arid plateau of New Mexico in relation to disease. A broad view is taken of the scope of this work and many correlated subjects are under con-

sideration. This laboratory occupies a unique position in the field of science, as it is the only one in the country having this special object in view in its founding. The work done in the laboratory is meeting the expectation of men of science at large, and is calling attention to the especial advantages offered by the healthful climatic conditions of New Mexico. Through the labors of Prof. John Weinzirl, the vice-director, the attention of the trustees of the Elizabeth Thompson science fund of Boston has been attracted to this field of work, which is of such far-reaching importance to the whole human race, and they have awarded two gifts to the laboratory, amounting to \$125 each, during the years 1903 and 1904, to be used in the investigations under way.

The gymnasium is a substantial building, 30 by 50 feet. It is provided with the best of apparatus, which has been added to in the past year. Provision is made for physical measurements and record. The physical-culture work is under expert supervision, both for the young men and the young women. Outdoor athletics are encouraged within the bounds of moderation.

The ladies' cottage, which was formerly the residence of the custodian, served during the year as general boarding hall and for the accommodation of a few young ladies.

#### LIBRARY.

The library contains about 6,000 bound volumes and about 1,000 pamphlets. The Dewey system of cataloguing is used, and the reading table in connection with the library has upon it a good supply of the best current periodicals and papers.

#### UNIVERSITY GEOLOGICAL SURVEY.

Following the plan pursued for many years, considerable field work in geology has been done during the past year at the private expense and in connection with the field instruction of the classes in geology, but for lack of funds the results of the work have not as yet been published. This work was largely confined to the Sandia and San Pedro mining district and the vicinity of the Albuquerque volcanoes and adjacent mesas, and the saline lands of the Pecos Valley and the White Sands region, near Alamogordo. Some very interesting results have been secured.

#### COURSES OF STUDY.

It will be noted from the catalogue of the university for 1903-4 and from former reports that from the time of the organization of the university up to the present there has been a rapid increase in the amount and variety of the studies offered and in the standard of entrance requirements. This year has been a substantial advance along these lines. The requirements for admission to the preparatory school have been brought up to those of the best academies and high schools of the country. No students are now admitted who have not completed the work of the eighth grade of a public school of recognized standing. The preparatory course, which was three years, was a year ago increased by action of the board of regents, on recommendation of the faculty, to four years. Students who complete the preparatory course are now prepared to enter the freshman class of this or any university in this country. The commercial and normal courses have been also strengthened.

The college course embraces four years of work, as heretofore, but the plan of studies has been so changed that a greater freedom of election within prescribed limits is granted to the student, thereby tending to adapt the course of study more nearly to the individual characteristics and needs of the student.

The standard of work done in the four years in the preparatory school and four years in the college places this institution alongside the best State universities of the land. Your special attention is called to the effect which the constant raising of the standard of the work has had on the attendance of the school in point of numbers. It is a well-recognized fact that the per cent of scholars who remain in school constantly decreases from the primary grades to the high school, and the same law holds good for the higher work of the college. It is therefore a source of constant congratulation to the people of this Territory that, with constantly increasing standard of requirement of the work of the university, the university has maintained about the same average attendance of students. Now that the work is up to the recognized educational standards of the land, it may be confidently expected that the next few years will see a very substantial increase in the number of students attending the



university. This increase has already been quite apparent in the past year. It is believed that the regents have shown their wisdom in constantly developing their curriculum at the expense of large numbers, until now the university stands where it was intended by its wise founders that it should stand—at the head of the system of public instruction of the Territory, leading directly on from the twelfth grade of the high school through college. At the same time it has been found necessary to maintain the preparatory school to meet the demands of large numbers of our youth of both sexes who are not so favorably located that they may have the advantages of a high school training. The attendance for the school year has increased about 21 per cent over that of last year, there being 185 enrolled.

#### FACULTY.

The faculty for the school year 1903-4 included William G. Tight, Ph. D., president, professor of geology; Josephine S. Parsons, principal of commercial department; Charles E. Hodgins, B. Ed., dean, professor of education; John Weinzirl, M. S., director of Hadley Climatological Laboratory and professor of chemistry and biology; Ethel A. Hickey, A. B., professor of English; Rupert F. Asplund, A. B., professor of Latin and Greek; Aurelio M. Espinosa, Ph. B., professor of Romance languages; Martin F. Angell, B. S., professor of physics and mathematics; Julia D. Brown, A. B., librarian and instructor in history; Carl Showalter Hertzog, B. L., director of school of music and professor of theory and stringed and brass instruments; Mabel Stevens Himoe, professor of piano and musical history; T. L. Krebs, B. A., professor of voice and harmony; Elizabeth Powers, instructor of piano; Flora M. Schaefer, instructor in expression and physical culture; Olivia Morton Birtwell, B. Ed., instructor in musical kindergarten; Lillian Gertrude Huggett, student assistant; Kate Cunningham, stenographer; Kate Kelley, matron of Ladies' Cottage.

I take pleasure in saying that the professors are persons with highest training, and with but few exceptions have had large experience in university work in older institutions. With such a competent faculty of instruction in our Territorial university there is little need in our people to send their children to distant schools, where, as a matter of fact, they will often come under the instruction of less competent teachers.

#### IMPROVEMENTS.

During the year a large amount of general repair work was done, including outside painting and inside finishing. Two new chemical laboratory desks were installed and other minor improvements in the library and laboratories. During the year a complete water plant was installed. A well was sunk to the depth of 250 feet, where a large vein of excellent water was struck. A large-sized aeromotor windmill is used to lift the water. This plant gives to the university a large increased water supply and greater fire protection. During the year 15 new hydrants with the necessary piping were placed to facilitate the work of irrigation. In compliance with the governor's proclamation, Arbor Day was celebrated by our students and some 85 new trees were set upon the campus and provision made for their irrigation.

#### NEEDS.

But little progress has been made in meeting the needs of the university in its growth since my last report to you, and I therefore would repeat my statement of these needs, which are even more pressing than last year.

In pursuance of the instructions of the board of regents, during the summer of 1902 several rooms in the administration hall were furnished for the accommodation of young men, and the cottage which was vacated by the resignation of Mr. Custers as custodian in June was furnished as a dining hall, and a few rooms on the second floor were furnished for young women. These arrangements were also maintained during the past year.

The rooms given up for this purpose are very greatly needed for recitation rooms, and it is essential that this arrangement be only temporary. All the available rooms for both young men and women are taken, and the dining room is crowded beyond its capacity, about 30 boarders being accommodated at the present time. The success of this experiment is certainly added evidence of the very great need at this school of suitable dormitory quarters.

Many parents who would gladly avail themselves of the advantages which the university offers their children for higher education refuse to send them here, where they must be exposed to the temptations of city life. They prefer to send their children to other schools outside the Territory, where they will be under the full charge of the university authorities. The present arrangement only partially meets this need, and it is earnestly hoped that larger provision can be made by the opening of the next school year.

## UNIVERSITY GEOLOGICAL SURVEY.

As has already been stated, something has been done in this work during the year, but it is earnestly hoped that means may be provided whereby this work, so important to the development of the Territory, may be carried forward and the results published for distribution.

## EQUIPMENT.

The Hadley Climatological Laboratory furnishes a most admirable home for the scientific work in the university, but the laboratories are very greatly in need of added equipment for more thorough instruction. The basement of the building should be finished at once, and with a comparatively small outlay a fair equipment of apparatus to meet the present needs could be provided. This need is most felt in the physical and electric lines, where the demand for more thorough and extended laboratory instruction is imperative. This is a very important part of the work, and in view of the large part which electricity will undoubtedly play in the future development of our Territory it is highly desirable that provision should at once be made for that work in the university.

Permit me to say in closing that I consider the work of the university during the past year has been most gratifying, and that the prospects for the near future are very promising. The university is certainly a credit to the Territory and should be the pride of every loyal citizen who assists in its maintenance.

**NEW MEXICO COLLEGE OF AGRICULTURE AND MECHANIC ARTS  
AND THE AGRICULTURAL EXPERIMENT STATION AT MESILLA  
PARK.**

[Luther Foster, president.]

## BOARD OF CONTROL.

The personnel of the board of regents has remained the same during the past two years. As now organized, it consists of the following members: Granville A. Richardson, of Roswell, president, whose term expires in 1905; Herbert B. Holt, of Las Cruces, secretary and treasurer, whose term expires in 1908; Seaman Field, of Deming, whose term expires in 1906; W. A. Cooper, of Santa Fe, whose term expires in 1904; Jose Lucero, of Las Cruces, whose term expires in 1907. Ex officio members, Miguel A. Otero, governor, Santa Fe, and J. Franco Chaves, superintendent of public instruction, Santa Fe.

## FACULTY AND INSTRUCTORS.

The following is a list of the faculty, instructors, and other officers of the institution, which remained practically the same throughout the year, the only changes occurring being the retirement of Mr. Charles L. Post in March from the department of chemistry on account of his health, and of Mr. H. C. McLallen from the agricultural department on April 1 to accept a position in connection with the Wyoming University: Luther Foster, M. S. A., president, professor of political economy and director of the experiment station; Clarence T. Hagerty, M. S., professor of mathematics and astronomy; Hiram Hadley, A. M., professor of history and philosophy; Elmer O. Wooton, A. M., professor of biology, in charge of geology, and station botanist; Francis E. Lester, registrar and principal of department of stenography; John D. Tinsley, B. S., professor of physics, vice-director, and soil physicist of the station; Alice Horning, B. S., professor of domestic science, dean of women, and matron of women's hall; John J. Vernon, M. S. A., professor of agriculture and horticulture, superintendent of grounds, and station agriculturist; D. M. Richards, A. B., principal of the preparatory department; Charles Mills, professor of mechanical engineering and



superintendent of buildings; Merritt L. Hoblit, A. B., professor of Spanish and Latin; Alfred S. Frost, professor of military science and tactics; Raleigh F. Hare, M. S., professor of chemistry and station chemist; John R. Macarthur, Ph. D., professor of English; Fabian Garcia, B. S., professor of horticulture and station horticulturist; Geraldine Combs, assistant in preparatory department; Archie Bruce Sage, B. S., assistant professor of mechanical engineering; Charlotte A. Baker, librarian and assistant in English; Frances Elizabeth Blakesley, B. L., assistant in preparatory department; John Oliver Miller, B. S., assistant to the registrar and in the department of stenography and typewriting; Elizabeth E. Shimer, assistant in the preparatory department; Clara Louise Foster, B. S., assistant in domestic science; James S. Macgregor, B. S., assistant in mechanical engineering department; Pinckney Ford, assistant in department of stenography and college stenographer; Charles L. Post, M. S., assistant in the department of chemistry; H. C. McLallen, M. S. A., assistant in agriculture; James M. Scott, B. S., assistant in agriculture; Abbie L. Dingess, instructor in instrumental music; Honora M. M. Murphy, instructor in vocal music.

#### ADDITIONAL COURSES.

The following new courses of study were added to the curriculum and successfully carried into effect: A correspondence course in Spanish, covering four terms of instruction of 40 lessons each; a one year's course in commercial training, embracing instruction in commercial arithmetic, bookkeeping, and business forms; a course of instruction in vocal music, including both the elementary and advanced work. In addition to the above the English stenography course was strengthened by the addition of two terms of instruction in commercial English, and the Spanish stenography course by one year's instruction in commercial Spanish.

#### LITERARY SOCIETIES.

The literary work of the institution was strengthened by the organization of two new literary societies. For more than ten years after the organization of the college the Columbian Literary Society was the only organization of its kind, and its membership did not include students of the preparatory department. Three years ago the students studying Spanish organized a society known as "El Liceo Cervantes," whose object is to encourage the faltering efforts of beginners in the study of that language, at the same time setting before them the more successful performances of advanced students who have perfect command of the language and who, therefore, furnish excellent models for the learner.

In the fall of 1902 the students of the preparatory department organized a literary society, which has been continued with much enthusiasm ever since. A very large per cent of the students of this department are members of the society. They elect their own officers, make their programmes, and have charge of the meetings, the principal and teachers simply acting as advisory members.

Within the past year the members of the subfreshman class organized what is known as the "Minerva Literary Society." These students were practically out of the preparatory department and were not eligible to membership in the Columbian; hence the necessity for an organization of their own, to which students from all classes of the college are eligible.

Within the year the stenography department also formed an organization, which is known as "The Stenographers' Association of New Mexico." Its programmes consist of papers, debates, etc., of special interest to stenographers.

In addition to the above-mentioned literary organizations, the seminary includes all the students of the English department. It affords excellent opportunity for training in orations, debates, essays, and declamations. This society meets only once a month. Each member is required to take part once during the term, and must perform the part assigned to the best of his ability. It is directly under the supervision of the head of the department, and each participant receives individual instruction, both in delivery and composition. This organization was formed three years ago. During the past year the exercises were varied by the introduction of some dramatic work, which gave better opportunity for training in vocal expression. The entertainments of the seminary, in connection with the department of music, formed a pleasing and instructive feature of the past year's work. The following is a list of the programmes presented:



October 23, studies in art: The paintings of Raphael, Rembrandt, and Rosa Bonheur.

November 18, study of the composer Verdi: Papers and musical selections; scenes from *Il Trovatore*, including "The anvil chorus," "The tower scene," "The miserere," and "The prison scene."

January 16, performance of Dion Bouceicault's comedy, *London Assurance*.

February 19, studies in architecture: Illustrated by original designs of the students.

March 18, vocal and instrumental recital by the pupils of the musical department: Devoted to American composers.

April 23, performance of an original farce comedy, entitled "In the School Too Much Trouble," by the members of the subfreshman year.

May 30 performance of Gilbert and Sullivan's comic opera, *The Mikado*.

#### THE NEW MEXICO COLLEGIAN.

A very creditable college publication, entitled the "New Mexico Collegian," is published monthly throughout the college year. The paper was founded in 1893, and has been published regularly ever since. Its issues usually contain from 30 to 40 pages, and the annual commencement number, which is much enlarged, is much larger and of greater scope. The publication is managed and edited entirely by bona fide students of the college, through a board appointed by the Columbian Literary Society.

#### ADDITION TO DORMITORY.

An addition to the girls' dormitory, 30 by 70 feet, with a wide porch extending the full length on the south side, was completed in June. This building is constructed of brick, with stone foundation and stone trimmings. It contains 20 rooms, and provides accommodations for 32 additional students. The total cost of this addition, including plumbing, but not furnishing, was \$7,182.55. It will be furnished and ready for occupancy by the beginning of the fall term.

#### ATTENDANCE.

The enrollment for the year reached 234, the largest number the institution has ever had in attendance, and it would have been still larger could the addition to the girls' dormitory have been completed in time to admit all who applied for rooms. The increased attendance is not the only factor to be noted in connection with the growth of the institution. The students were, as a whole, more mature, further advanced, and accomplished more work in the same period than formerly. The boarding places in the vicinity of the college were taxed almost to their full capacity to take care of those in attendance. The coming year, with the addition to the girls' dormitory, the crowded boarding conditions will be relieved to some extent, for 32 more young ladies may be accommodated there.

Of the whole number of students enrolled 124 were in preparatory classes, 33 in regular college courses, 32 in the stenography course, and 45 in special courses: 140 young men took military drill. Of the 234, 76 were young women and 158 young men.

#### GRADUATES.

The senior class was composed of the following members, all of whom completed one of the regular four years' courses: C. D. Case, L. W. Case, Thora Lute Foster, Orpha Hoblit, Pearl Miller, and Rowena Mott. Two were graduated from the general course, 2 from the domestic science, 1 from the agricultural, and 1 from the engineering. As just recognition of the work accomplished, the board of regents conferred on each of these graduates the degree of bachelor of science. It also conferred upon Mr. Orrick B. Metcalfe the degree of master of science, he having completed the required one year's graduate study in the department of biology. The master of science degree was also conferred upon Mr. J. S. Macgregor for special investigations in the strength of New Mexico building materials made in connection with his two years' service as an assistant in the engineering department.

The work of the graduating class, as well as that of the post graduates, was marked by the unusual thoroughness of the investigation and the care shown in the preparation of the theses. Their subjects were as follows: "Irrigation," C. D. Case; "A sewerage system for the dormitory," L. W. Case; "The folk-lore of New Mexico," Thora Lute Foster; "Un tipo singular," Orpha B. Hoblit; "Mexican cookery," Pearl C. Miller; "The study of the American magazine," Rowena Mott; "Private investigations in the area," Orrick B. Metcalfe; "Tests of some New Mexico building materials," J. S. Macgregor.

The thesis on the strength of New Mexican building materials is considered of so much importance to the contractors and builders of the Territory that it has been decided to arrange it in such a form as seems most convenient for practical use, and have it published as a bulletin of the engineering department of the college.

#### ATHLETICS.

The college has a strong athletic organization, which includes football, baseball, basket ball, and lawn tennis. This association holds a regular annual track meet on the first Friday in May. Last year the intercollegiate track meet was also held on their grounds at commencement time, the last day of May. This institution now holds the championship of the Territory in basket ball, and all the records of the intercollegiate track meet except three—the 220 hurdles, throwing the hammer, and the discus. Should the college win next year in the intercollegiate meet, the Territorial intercollegiate cup will remain permanently with this institution, since it will have won it three times in succession.

It is believed that the athletic association of the college is of much benefit to the institution; professors have observed that the leaders in athletic sports and in military drill are, as a rule, the best men in their regular college work.

#### MILITARY.

The military department had only gotten fairly organized and equipped previous to the beginning of the last year, so this was really the first regular year's work. Much interest was taken, and the drill proved an excellent assistance in developing and strengthening the students and in giving them manly bearing. The military inspector of the United States Army who visited the institution reported them as one of the best drilled companies of cadets in his district. Military science and tactics has been so thoroughly established in the short time that it has been connected with the institution that it will no doubt hereafter form a regular department of the college.

#### EXHIBIT.

Those who have not gone through the experience do not appreciate what it means to prepare an exhibit from a department of the college while the regular work of the institution is going on. The different heads of departments, with their assistants, prepared a very creditable exhibit of students' work—farm products and results and processes of investigations—for the Louisiana Purchase Exposition at St. Louis. They also prepared a very entertaining and instructive exhibit for our Territorial fair at Albuquerque last October. Besides the above, some of the departments of the institution contributed special lines of work done by students or resulting from experiment station investigations to the agricultural college and experiment station exhibit of the United States, which is in charge of the Association of American Agricultural Colleges and Experiment Stations.

#### LIBRARY AND APPARATUS.

At least 1,200 volumes have been added to the library since my last report, the larger portion going to the general library and the rest to the different department libraries. The library as a whole, including those of the departments, now contains 11,071 bound volumes and 7,000 pamphlets, altogether valued at \$14,000.

Some rare, valuable collections were added to the college herbarium; a very complete set of casts to the fossil collection for illustration in the study of geology; a 16-inch improved Steptoe shaping machine to the iron shop, besides a number of new pieces of apparatus to the physical and other department

laboratories. In facilities for instruction, either in books or illustrative apparatus, every department is kept fully up with the times. No other institution in the Southwest offers better opportunity for study and investigation or more complete apparatus and other facilities for illustration.

#### NEED OF MORE BUILDINGS.

With the steady growth and expansion of all the departments of the college the urgent need of more room is keenly felt. The institution has outgrown its old quarters, and under such cramped conditions it is difficult to make the most effective use of our facilities of instruction or to use the teaching force of specialists to the best advantage. The departments of agriculture, domestic science, horticulture, military science, and music have no regular homes of their own, and all of the buildings are too fully occupied by other departments to furnish them even suitable temporary quarters.

A boys' dormitory is a necessity before we can satisfactorily take care of many additional young men.

#### EXPERIMENT STATION.

The following are the general lines of work now in progress at this station:

#### OUTLINE OF EXPERIMENTS.

##### *Department of agriculture.*

- I. Feeding:
  - Dairy cows—
    - Soiling crops: Alfalfa, oats, barley, millet, wheat, rye, corn, sorghum, and Kaffir corn. Alfalfa: Stages of growth and method of curing.
    - Fodders and grains with the usual ration.
  - Steers—
    - For Kansas City market. Relative values of feeds.
  - Sheep—
    - Practically same as for steers.
- II. Pumping for irrigation: To determine the best kind of well, pump, and engine to use, the cost, and the effect of the water on crops.
- III. Soil correctives:
  - First year: Vetch, sweet clover, cowpeas, soja beans, manure, check. To be plowed under.
  - Second year: Wheat, oats, corn, Kaffir corn, millet, roots.
- IV. Alfalfa:
  - Nurse crops. Disking—winter and summer. Methods of handling hay. Turkestan. As a soil corrective and fertilizer.
- V. Grasses and pasturage:
  - Grasses for pasture. Mixed grasses for pasture. Grasses for lawns.
  - Variety test. For alkali land, second bottom.
- VI. Small grains:
  - Wheat—
    - Variety test. Macaroni on station farm and over the Territory. Irrigation.
  - Oats—
    - Variety test.
- VII. Forage crops:
  - Corn, Kaffir corn, sorghum, millet, etc.

##### *Department of horticulture.*

#### I. Fruit:

Observations on the blooming and ripening periods of apples and pears in the experimental orchard. Noting the effect of severely pruned (cut back) apple and pear trees. Spraying experiments for the codling moth and other pests. Observations on young peach orchard to study the effects of the depth of planting on the root development. Experiments in pruning, bearing more or less on the subject of "sun-scald" of the peach. Root pruning—test of the common methods versus the "Stringfellow" method. Variety, pruning, and cultivation tests with grapes and small fruits. Experiments in winter irrigation of fruit trees and grapevines. .



## II. Vegetables:

## Onions—

Test of varieties and keeping qualities. Horse culture versus hand culture; seed planted in the field versus seed planted in bed and transplanted. Test to be tried on commercial scale.

## Tomatoes—

Variety test. Field grown versus bed grown and transplanted. Two or three varieties to be grown in quantity for market, to secure yield and cost.

## Mexican Chili—

Preliminary work in the improvement of varieties by selection. Field grown versus bed grown transplanted. Growing same for market.

## Early corn—

Variety test. Suckering for earliness. Detasseling for earliness. Growing for the market.

## III. Forest trees and ornamentals:

Starting an arboretum and testing of forest trees, shrubs, and flowers.

*Department of chemistry.*

Routine work on samples submitted. Chemical survey of waters in the Territory. Study of the composition of the ash of native plants. Analyses of samples of feeding stuffs in cooperation with the agricultural department. A study of the composition of New Mexico Cañaigre.

*Department of botany.*

Investigations in relation to the range problem in New Mexico.

Gathering data on the distribution of the native grasses and forage plants with a view to the preparation of a map of the Territory setting this forth. Investigations relative to the customs and laws regulating the ranges of other countries, States, corporations, and individuals. The cultivation of native forage plants in plats under irrigation and without irrigation. Experiments in germination of seed—to investigate methods and times of sowing seeds and per cent of germination of different species. Experiments on slight cultivation of open range. Collection of seeds.

*Department of soils.*

## I. Cooperative experiment on corn. This will include:

Mechanical analyses; salt content and movement of salts; moisture record throughout the growing season; study of other physical characteristics; measurements of the amount of water applied.

## II. Moisture records on various plats for the departments of agriculture and horticulture, especially in connection with winter irrigation.

## III. Alkali and soil studies in the Mesilla Valley and elsewhere

## IV. A study of drainage in the Pecos Valley.

## PUBLICATION.

At present the edition of each bulletin of the station is 4,000 copies. These are largely distributed within the Territory, but some of them find their way to all the States and Territories and to a number of foreign countries. The four bulletins issued during the last fiscal year were on subjects as follows: No. 49, Cañaigre, by R. F. Hare; No. 50, Steer and Lamb Feeding, by J. J. Vernon; No. 51, Native Ornamental Plants of New Mexico, by E. O. Wooten; No. 52, Onion Culture, by Fabian Garcia.

The material for a number of bulletins is now on hand, and the coming year a still larger number will be sent out.

Press bulletins have also been regularly issued and sent to all the newspapers of the Territory and to most of the agricultural papers of the United States, and they have been very generally published by the papers receiving them. The following is a list of the subjects upon which these short, practical bulletins were written: No. 82, Amounts of Moisture in the Soil of the Station Farm under Different Amounts of Irrigation and Cultivation, by J. D. Tinsley; No. 83, Windbreaks and Shelterbelts, by E. O. Wooten; No. 84, The Grape Root Gall, by Fabian Garcia; No. 85, Sinking a Well for Irrigation Purposes at Albuquerque,

by J. J. Vernon; No. 86, Preliminary Irish Potato Test, by Fabian Garcia; No. 87, Testing Cows for Tuberculosis, by H. C. McLallen; No. 88, Baking Powders, by R. F. Hare; No. 89, Formulas for Preserving Fruits in Liquids, by Fabian Garcia; No. 90, La Chinche de la Calabaza, by Fabian Garcia.

#### IRRIGATION BY PUMPING.

This particular line of work has no doubt attracted the greatest attention and resulted in the most immediate benefit to the farmers and stockmen of New Mexico. This work includes a wider field than one would at first consider necessary—the well, the pump, the engine, the fuel, the distribution of the water, and the comparison of its effects with that of river water are all a part of the work and require careful investigation in settling the feasibility of pumping from the underflow to grow crops. In this work substantial assistance was received by the station from the United States Agricultural Department. The station has a force of specialists, with competent assistants, working at the various problems involved in the outline given above, and every year will doubtless bring results of greater value to the agricultural interests of the Territory.

### SCHOOL OF MINES AT SOCORRO.

[Charles R. Keyes, president.]

#### GENERAL STATEMENT.

The past year has been the most prosperous one in the history of the New Mexico School of Mines. A number of causes have conspired to bring about these results. In the first place, there has been a complete reorganization of the work, so that the courses offered are more in harmony with those of similar schools of other States and other parts of the world. Second, the selection of an entirely new faculty the members of which were recognized specialists in their respective departments was most fortunate. For scholarship, practical experience, and ability the faculty is believed to be second to none among the mining schools of the country. A third important factor has been the increased facilities for instruction.

Owing to a number of unusual features in equipment, some novel departures in the matter of instruction, and exceptionally favorable natural conditions in environment, the mining school has attracted wide attention throughout the land. This is well shown by the numerous public press notices, letters of inquiry, and especially by the large number of students desiring to avail themselves of the special opportunities now offered by New Mexico. The last-named feature is most gratifying. When the people of the country can turn to New Mexico for superior advantages in education, with the older institutions of the East in active competition, it is indeed a proud day for us all.

#### ORGANIZATION OF THE MINING SCHOOL.

The New Mexico School of Mines is composed of three separate divisions: The school of mines proper, the college, the academy.

*The school of mines.*—The primal division of the institution is essentially for professional and graduate work. Its plan of close articulation with the college is fully explained elsewhere. The relationships to the technological schools are also made clear in another place.

*The college.*—The work leading up to the baccalaureate degree is offered not only in connection with that of the professional engineering and technological training, but it is open to all students, particularly those from New Mexico, who are looking forward to a liberal education independently of its relation to professional careers.

*The academy.*—A recent legislative act made it obligatory upon the higher educational institutions in New Mexico to maintain temporarily a preparatory department, in order to better supplement the work of public schools. With this end in view the school of mines has affiliated with it the Socorro High School.

#### SCOPE OF THE MINING SCHOOL.

The field which the mining school occupies is the most important, technologically, of any in the Southwest. In a mining State the mining school must always remain the leading educational institution.

The ideal to which the New Mexico School of Mines tenaciously holds is the practical directing of young men to take active part in the development of the mineral wealth of our country and the world.

The New Mexico School of Mines is a State institution. It was established primarily to promote mining and mining interests in southwestern United States. However, it has a much wider scope. It is intended to provide adequate facilities for the thorough training of men in the ways of modern mining. The purpose is to meet the demands for a mining education (1) by young men who are residents of New Mexico, (2) by men living in the great Southwest, and (3) by students from other parts of the country and world desiring to avail themselves of the peculiar advantages of this region.

During the past quarter of a century the development of the mineral wealth of the nation has been phenomenal. Of late the call for adequately prepared young men to direct mining enterprises in all their various ramifications has been unprecedented. The mining schools located in the chief mining regions have been taxed beyond their capacities and have been obliged to turn away students.

As a technical institution, the field of a school of mines is commonly considered to be outside that of ordinary college and university instruction. In the case of the New Mexico school, location has made it necessary to trespass somewhat upon both the other fields of modern higher education. On account of the unexcelled natural surroundings for original research, work concerning problems relating directly to mining and geology, provision for advanced work is made by the school. It is not believed that the best results are secured by shutting out the humanities from the technical school. There is offered, therefore, instruction in the most important of these branches, a knowledge of which goes to make up a liberal education. All students who are not already college graduates are encouraged in every way to take up as much as possible of the broader work.

In the training offered by the school there is noteworthy concentration of effort. There are many advantages in the direction of effort along few lines. In contrast with the many diversions that necessarily exist in most technical institutions of learning, where all practical branches are equally represented, singleness of purpose is a leading feature in the New Mexico School of Mines. The student body in all its parts becomes immensely more sympathetic. The workings are more perfectly harmonious. Instruction is more advantageously given.

#### CHARACTER OF THE WORK.

A notable feature of the work of the school is the emphasis placed on the practical and business side of the training. Besides a broad theoretical knowledge, the student also acquires an insight into the business and executive aspects of the engineering profession. His sympathies are aroused for the everyday work he is likely to come in contact with after graduation.

Higher technical education is to be clearly distinguished from what commonly goes under the title manual training where an art is learned. While a higher technical training has much to do with the art of the subject, it goes further and delves into the philosophy of things. Ability to reach the confines of the known and to be ready at any moment to step without fear into unexplored fields is the test of every branch of knowledge in its demands to recognition and acceptance into the realms of culture. It is my endeavor at this time to attempt to show that modern education, along some technical lines at least, has attained this higher level.

Intellectually, the work along these lines is of a high order. It is in the strictest sense professional in character. An impassable gulf separates the miner from the mining engineer, the electrician from the electrical engineer, an adept in the mechanical arts from the mechanical engineer. The engineer's preparation compares favorably with that of any other university student.

Besides having a broad general culture, to paraphrase a recent writer, the mining engineer must be par excellence a mining engineer, and besides being a mining engineer he ought to know more about some particular branch of mining engineering than anyone else. This clearly alludes to the professional character of the occupation. As such, it presupposes a special training corresponding to that now required to enter the practice of the law or medicine.

On this plan the mining engineer in his training may choose any one of three special branches of the subject. He may develop his talents on the mechanical



side of mining engineering, on the metallurgical side, or on the geological side. All are equally important in modern mining. And modern mining demands expert work.

#### STANDARD OF REQUIREMENTS.

The standard of work now demanded by the New Mexico School of Mines is the same in all essential features as that found in the best mining schools of the world.

The main requirement for matriculation in the New Mexico Schools of Mines is a satisfactory demonstration that the candidate is amply prepared to profitably carry on the courses which he desires to select. Perusal of the outlines of courses offered soon gives an adequate idea of what is necessary in each case. Formal examinations may be held. The necessary preparation is afforded by the training received in the best high schools of the country. The ordinary requirements for entrance to colleges of acknowledged standing admit also to this institution. Special attention is called to the mathematics. Thorough preparation is of prime importance, in order that the student may secure the full benefits of his studies. In the school of mines the time of the student is fully occupied. There is little time to make up deficiencies.

Admission to advanced standing is based upon similar grounds. In case the demonstration of fitness to undertake advanced work is not satisfactory, examinations may be given in any or all subjects below those in the courses to be pursued. Undergraduates of other colleges may receive credits for the work already done, so far as it can be made equivalent to that required in this institution, in the courses specified. The applicant's knowledge of mathematics will determine his class rank, conditions being allowed in other subjects. College graduates intending to take up professional courses will be admitted as regular students of advanced standing, and at first credits will be given provisionally for work already done along the lines of professional courses.

In several of the departments of study the opportunities afforded by New Mexico for college graduates to undertake original investigations and follow special lines of work are so exceptional that the school encourages efforts of this kind in every way possible. Whether or not the student intends to become a candidate for the higher academic degrees in this or other institutions, the same care will be taken to give him every facility to further his work.

Admission as a student in the special courses offered has only a single test in each case—that of furnishing satisfactory evidence that the applicant is qualified to follow the chosen course.

Teachers and persons of mature age engaged in technical pursuits are offered every opportunity of the lecture room and the laboratory.

#### COURSES OF STUDY.

In arrangement, character, and practicability the courses of study offered by the New Mexico School of Mines is believed to be a distinct advance over those of most of the older institutions of the kind and over those of the larger universities where mining engineering is taught.

The school offers regular courses of study in the following: 1, mining engineering; 2, metallurgy; 3, mining geology; 4, civil engineering; 5, chemical engineering; 6, electrical engineering; 7, liberal arts.

Each course covers four years (including summers, except the last mentioned). During the first year the studies are nearly identical for all courses, but after that they rapidly diverge.

These courses lead up to the degrees of bachelor of arts, A. B.; mining engineer, E. M.; civil engineer, C. E.

It is expected that the entrance requirements will be somewhat more than those for ordinary college admission, so that the student virtually enters the second college year. Upon the satisfactory completion of the regular course at the end of three years the bachelor's degree is conferred, and at the end of the year following—the fourth year—the engineer's degree is given. The summer work taken in connection with the work of the regular school year develops rather more than the usual requirements of technical schools and colleges.

In the courses of chemistry and metallurgy and of the mining geology excellent opportunities are offered for advanced work extending over three years beyond that offered in the regular college work.

In addition to the four regular courses scheduled, several special courses are

offered to meet the demands made by persons of mature age and more or less practical experience in mining.

The special courses offered during the ensuing year are: 1, assaying; 2, mine surveying; 3, land surveying; 4, prospecting; 5, practical mineralogy; 6, geology of ore deposits.

#### INSTRUCTION IN MINING ENGINEERING.

The course in mining engineering aims to so symmetrically develop and train the student that he may be able to enter at once into the spirit of a mining enterprise, formulate complete plans for it, and see that the entire work is carried successfully to completion. The selection and articulation of the various studies are believed to be such as to properly adjust them to the main theme. It is believed that very nearly the due proportions of time are given to the theoretical aspects of the subject, laboratory demonstrations, field practice, and actual work in and about the mines.

The several departments of the school are drawn upon, each according to its relative importance in mining operations. The courses of study offered by each department are quite complete as a connected and dependent sequence on a given subject. But in the schedule for mining engineering, for example, only certain ones in each department are essential as bearing directly upon the mining profession. The laws and principles laid down by mathematics, mechanics, and physics form the foundation upon which the superstructure of the professional training is built. The natural sciences of mineralogy, geology, chemistry, metallurgy, and biology furnish indispensable data. Mechanical, civil, and electrical engineering subjects contribute largely to a complete mining course. Business capacity and a knowledge of men are necessary to a successful career in mining engineering.

During the entire period of his training the fact is impressed upon the student that intelligent mining is strictly a business operation; that mining is to-day as capable of being put on a secure business foundation as any manufacturing enterprise; that from start to finish it is a proposition akin to all the great business workings, such as enable the railroad train or the ocean liner to run with certainty and dispatch; that while "lucky finds" will continue to be made, mining as a business is no longer a vast lottery, ever developing to their fullest extent the gambling propensities of mankind.

By constant association with men entirely engaged in the mining industry the student is soon introduced to the practical features of his training, and long before he has finished his training at school he will have acquired from actual experience a rather broad knowledge of the requirements and opportunities of the mining engineer.

The exceptionally favorable environment of the school being such as to fit it to a preeminent degree for a mining institution, special stress is laid upon the value of practical work in the mines and about the smelters. To this end the summer practice is emphasized. The student goes into the mines and becomes thoroughly familiar with their operation, the problems coming up for solution, and the special mechanical devices which have been built to meet the local difficulties. In order to make this work particularly impressive and valuable arrangements are made with mine operators and managers whereby remunerative employment is given for a longer or shorter period to such students. It is expected that arrangements may be effected by means of which provision may be made for all students who wish to avail themselves of these exceptional opportunities.

#### TRAINING IN METALLURGY.

The engineering feature permeates all of the work of the metallurgical engineering course. In the general plan the wide, practical experience of a large number of managers and superintendents of plants in the metallurgical industries has been taken into account and the work arranged with a view of overcoming as much as possible many of the defects in the commercial training of technical men. The oft-repeated assertion that chemical manufacturers prefer a good engineer with no knowledge of chemistry to a good chemist with no knowledge of engineering is not so much gross exaggeration as most of us are apt to believe. The engineering bearing of every aspect of the work in this course is emphasized.

Another practical feature of this course is the research work insisted upon. The solution of practical problems is given a prominent place. The student in his third year is first required to repeat several pieces of investigation and to



suggest any improvements that may occur to him. In his fourth year he is given actual problems that have not been worked out. From his various efforts he may choose one for his thesis, developing the whole subject and treating it exhaustively.

Students showing a special aptitude for research work are further encouraged by being assigned to work on the problems constantly being submitted to the officers of the school by mine operators and managers. Except when the problem is manifestly too intricate and difficult, this work is carried on under the immediate direction of the school and with the assistance of the mine superintendent. As a rule these problems are satisfactorily treated and often important results obtained.

#### INAUGURATION OF NEW DEPARTMENT OF MINING GEOLOGY.

A third branch of mining engineering which has grown up during recent years is rapidly acquiring more and more importance. This is what may be included under the title of mining geology, or geology of mineral deposits. The important fact developed during the past decade among mining men is that a mining enterprise to be most successfully carried out is dependent as much upon the proper knowledge of the geological structure and nature of the district as it is upon the construction of the most carefully planned equipment.

In following out this branch, a divergence from the regular engineering course begins early in the second year. A considerable knowledge of practical geology is necessary, and of the methods of field work and the principles underlying independent investigations. Besides the subjects acquired up to this time in mining engineering, a good knowledge of mineralogy and an ability to use the petrographical microscope are desirable.

In the field work required up to the second year special effort is made to put the student into contact with geological features with which he is afterwards most likely to meet in studying mineral deposits, their genesis, structure, and geological relations. He is then called upon to repeat some piece of good work, and is afterwards put upon original investigation. In many cases the latter is, as in the metallurgical courses, often suggested by problems submitted by mining companies. Moreover, the companies often employ members of the school for just this work, in which case the student is doubly repaid.

The thesis must show special merit along geological and strictly engineering lines and must be published. New Mexico has a large number of problems suitable for this kind of work which are now awaiting solution.

#### CIVIL ENGINEERING AND IRRIGATION ENGINEERING.

For the first year all the engineering courses are essentially the same. In the second year these begin to diverge, until in the fourth year there is scarcely any study in common.

What has been said regarding the aims, methods, and opportunities of the course offered in this institution in mining engineering is largely true also of the course in civil engineering. The chief field practice is intended to be secured during the summer months. Besides the surveying usually taken up, special work is done in locating mining claims, railroad lines in mountainous regions, and in municipal engineering.

Mountainous regions offer so many problems not ordinarily met with that particular effort is made to acquaint the student with the details of as large a number as possible of engineering enterprises of this class.

The situation of New Mexico naturally gives unusual opportunities in land subdivision after the regulations of the United States Land Office in irrigation work and in making surveys or mining claims preliminary to securing the United States patents. Students have been able to attach themselves during the summer or a larger part of the year to regular survey parties, receiving the compensation usually allowed for this work. It is expected that these arrangements will continue indefinitely.

The advanced topographic work in connection with the Geological Survey is exceptionally instructive and of such a character that is usually not open to the student of engineering. Special attention is given to the earth's physiognomy as dependent upon the rock structure and rock composition underneath and to the manner in which both should be taken into account in engineering projects. The region round about Socorro has been subdivided into squares



containing about 25 square miles each. One of these squares is assigned to each student for surveying and mapping and for studying it in all its different aspects. By further effort the student may offer this work for a thesis.

#### COLLEGE OF LIBERAL ARTS.

The regular courses embrace all those studies, except Greek, ordinarily covered by college work. Special effort is made to make the grounding in science thorough. While primarily organized for citizens of New Mexico who desire a liberal and practical education as a preparation for business careers independent of technical or professional training, the college aims to meet all the general demands of the modern commercial activity.

In the languages emphasis is laid on the modern rather than the ancient, and among these courses a practical speaking acquaintance with the Spanish language is made much of, for the reason that in the commercial and mining world one familiar with the Spanish and English is able to travel with ease through the length and breadth of the three Americas.

The industrial phases of the sciences come in for broad treatment. Specialization along at least one branch of science is insisted upon.

In all the work of the college courses there are kept constantly in the foreground the various fundamental elements of success demanded by modern industrial conditions. But these courses are widely elective, so as to permit every kind of mind to develop to its fullest extent. The time required to complete the college course is made a secondary consideration; the amount and character of the work done is made of primary importance. The courses are made sufficiently flexible for a properly prepared and sufficiently matured student to finish in three years. For the majority of students the time necessary is four years. Those students looking forward to professional careers may so plan their work to complete the college course in three years, while those desiring purely cultural training are encouraged to devote four years to the work.

#### CHARACTER OF COLLEGE PREPARATORY WORK.

As an integral part of its regular work, the school of mines can not guarantee to undertake to furnish all the necessary instruction to students desiring to attend the school, but who have not met all the requirements for admission to the regular college courses. Provision is made for a certain amount of this preparatory work, but the extent to which this may be done is necessarily quite limited. Moreover, the maximum limit of preparatory studies permitted to be carried on in the school varies with the individual, his previous training, his aims, and his capacity to undertake extra work. Even if the school felt under obligations to give full preparatory instruction, it would be physically unable to do more than a limited amount, unless its present faculty be largely increased.

It can not be urged too strongly that students expecting to matriculate with this institution come prepared to take up the work without conditions. Every candidate for admission to the school may rest assured that after entrance his time will be very fully occupied.

#### FACULTY.

The faculty has been brought up to a high state of proficiency. As at present constituted, it is probably not only the strongest ever brought together in any educational institution in New Mexico, but it is doubtful if it is surpassed by the teaching corps of any similar institution in the whole country. As an index to the high scholarship of its members, their proficiency, and their broad experience in practical affairs, it is worthy of special note that there is included in the staff of instructors representatives of no less than 23 of our leading universities, colleges, and higher technical schools, and 4 foreign universities. Six of the head professors hold doctorates for university work done, and 7 hold other advanced degrees. There is no member of the present teaching corps of the institution who is not a college graduate.

#### UNUSUAL FACILITIES FOR MINING INSTRUCTION.

The natural environment of the New Mexico School of Mines is quite exceptional. It is almost ideal for a technical institution devoted to mining work.

Several features contribute to the success of this institution as a school of

mines. The unique natural surroundings of the school create an invigorating mining atmosphere, which is entirely wanting in situations away from the mines and mountains. The conservation of energy growing out of the special methods of instruction happily adapts the student so that he gets the most out of his efforts. The broad practical experience in fields outside of the school forms an integral part of the training in mining engineering. The encouragement for advanced and original work is such as is seldom offered by purely technical institutions. Moreover, at all times the student is made to feel that he is a part of the school organization and that his success is one of the best proofs of the school's success.

If we look into the history of modern mining schools and universities, we find that each becomes most celebrated along the line for which its locality is best known on account of its natural surroundings. Few institutions of learning are more dependent for success upon what may be called the accident of geographical location than the mining school. It may be truthfully said that no mining school is more fortunately situated, so far as natural environment is concerned, than that of New Mexico.

The New Mexico School of Mines enjoys the natural advantage of being located in the midst of a region peculiarly rich in minerals of nearly all kinds, and is within easy reach of the most varied geological conditions, all of which are within a radius of a score of miles of Socorro. Almost the entire geological column, from the precious metal-bearing formations of the Archean to the coal beds of the Tertiary, is here exposed. The industrial processes connected with mining and metallurgy may be seen admirably illustrated at Magdalena, Kelly, Rosedale, San Pedro, Hillsboro, Cooks Peak, Silver City, Pinos Altos, Los Cerillos, Gallup, Carthage, and elsewhere within easy reach of the school. These illustrate the most modern methods of mining, milling, ore dressing, concentrating, smelting, lixiviation, chlorination, etc., as well as the native Mexican methods, which are worthy of careful study, since the like can not be seen elsewhere in the United States.

The grounds immediately adjacent to the school of mines include irrigable land, plateaus, and mountain formations, all affording an excellent field for practice in surveying, the laying out of railroads and irrigating canals, topography, mine engineering, and geology, so that students can be prepared at the very doors of the school in those branches which usually require tedious excursions from most other schools.

New Mexico, so far as concerns the mountainous portion, which comprises nearly two-thirds of its area and is nearly all mineral bearing, is perhaps less known geologically than any other section of the United States. A little study of the plateau region of the northwestern portion of the Territory has been made by the United States Geological Survey, but only in a general way. No attempt has ever been made under Government auspices to investigate closely the geological structure of New Mexico mountains such as has been carried out in the other Rocky Mountain States, or to study the conditions of New Mexico mineral deposits as has been done in Colorado by Emmons, in Nevada by Curtis, in California by Becker, and in other States by other distinguished investigators.

The field for original scientific research in New Mexico is unrivaled by any other mining region, and the opportunities here offered are not neglected in the plan and scope of instruction.

It is proposed that much of the advanced professional work of the school shall be of an original nature, to the end that the graduates may be skilled, theoretically and practically, in the very problems which they as professional men will be called upon to solve. In connection with this work it is hoped to enlist every chemist, geologist, mining engineer, metallurgist, and other scientific investigator capable of observing and recording professional experience in the region. This work will be carried on by the advanced students under the direction of the professors, and will involve the collection of notes, sketches, maps, and specimens, and the results of directed observation in all matters relating to the sciences and arts embraced in the courses of study. The results of these observations, together with illustrations and analyses, will be printed from time to time in the scientific press, or in the special publications issued by the school. While this plan of instruction will furnish material for practical utility to the industries of the Southwest, and that in an important sense the school will have for its students not only those who may study within its walls, but also the greater part of the educated mining population of the region.

The subjects for such researches in geology and mining and in the reduction of the ores of lead, silver, gold, and copper are so numerous that it is impossible



to attempt to do more here than to mention the fact that the conditions of climate, drainage, water supply, and geological structure in New Mexico differ greatly from the conditions existing in other parts of the Rocky Mountains, giving rise to new problems in practice. These problems are not by any means all that deserve attention. The investigation of the ores of iron, manganese, aluminum, cobalt, nickel, tin, and quicksilver, together with the beds of coal, salt, alums, building stones, mineral paints, cement rocks, marls, etc., will be directly in the line of the advanced laboratory work of the school, and every student who undertakes such work will be encouraged in every possible way to accomplish the best results.

During the last year of his course every candidate for graduation is required to make a thoroughly scientific investigation of some subject connected with his course of study and to embrace his results in a thesis, which is subsequently published.

These advantages, which may be constantly made use of, thus become essentially a part of the school's equipment. To the greater part the student not only has access, but he is required as an integral part of his course to visit and critically inspect, under the direct supervision of his instructors, the various plants and works, and to make intelligent reports. Being obliged from the start to make the most of the exceptional opportunities presented, he quickly falls into the spirit of his present and future work, and at once necessarily acquires for his chosen profession a sympathy that is seldom attained except after school days are over and after long and strenuous effort.

Contact with practical and successful men week after week is a complete technical education in itself, even if it were not an essential part of a systematic course. The student receives an inspiration for productive work that is rarely otherwise acquired. His faculties of observation are sharpened. He has hopes well grounded for grand achievements. Everywhere he is able to find the most forceful illustrations of the abstract principles that are presented to him. In the practical courses he is continually reminded of the commercial bearings of his efforts. In the more purely scientific courses he is continually brought face to face with the specific bearings of his observations upon the universal problems. The lecture room, the laboratory, the field—all are equally necessary in a technical and scientific education.

The advantages for actual mining practice of the Torrance mine, now owned by the school, are alluded to elsewhere.

#### ESTABLISHMENT OF COMMERCIAL ASSAYING AND TESTING WORKS.

The wide demand which exists in the great mining district of the Southwest for disinterested and scientific tests and practical investigations has led to the establishment, by the New Mexico School of Mines, of a bureau for conducting all kinds of commercial work relating to mining and metallurgy. For this service the exceptional facilities of the various laboratories of the school and the extensive and practical experience of the instructors are freely offered. A reasonable charge is made for all assays, chemical analyses, and other tests. While the pecuniary considerations can not be entirely overlooked, great stress is placed upon excellence of work and exactness of results.

The expert character of instructors guarantees accuracy of the tests placed in their charge, and the special equipment of the school is such that few private assay offices and ore-treating plants can accomplish so satisfactorily the work, even if undertaken. The rapidly increasing amount of this work intrusted to the school is sufficient evidence in itself that the plan has been long needed to further the development of the mineral resources of the region.

The value of work is fully appreciated by successful mine owners and engineers in charge of properties. Probably no feature of the mining industry is more important than the avoidance of costly mistakes. There is nothing which more quickly brings a mining camp into bad repute than idle plants and deserted mines. Prospective investors wish first of all to be shown activity. In most cases of dead camps the idleness is not so much the fault of the district as it is the lack of recognition of the proper and most economical treatment of the ores.

A special act of the legislature makes provision for carrying on commercial testing. The section of the law governing the school of mines, chapter 138, section 38, acts of 1889, reads: "The board of trustees shall require such compensation for all assays, analyses, mill tests, or other services performed by said institution as it may deem reasonable, and same shall be collected and paid into



the treasury of the school of mines." All moneys received from this source are used for the betterment of the laboratories.

A special circular is issued giving the schedule of charges, other necessary information, and methods of preparing and shipping samples. Copies are mailed on application. By special resolution it is required that all charges shall be paid in advance.

*Commercial assaying.*—The assaying for gold, silver, copper, lead, zinc, and the common metals is carried on in all its various phases. The charges are about the same as everywhere prevalent. All work is done in duplicate, and in case of any nonconcordant results such assay is repeated. On charges on assays for mining companies amounting to \$50 a month a special discount is given. Particular attention is given to umpire work.

Assays for the rarer metals, as uranium, vanadium, nickel, cobalt, and the like, are made under specially favorable conditions which insure great accuracy. Lime, silica, iron, alumina, and manganese determinations are made according to improved methods and at rates considerably below the customary charges.

*Experimental tests on ore treatment.*—Accurate laboratory tests are carried on in order to determine the most approved method of treating complex and difficult ores. The scope of the work is continually enlarging. So soon as the Rio Grande Smelting Works comes into full operation it is expected that eventually every known method and every kind of machine will be in readiness to run practical working tests up to mill runs of 100 tons. This work is done under expert supervision, with no predilection for method or machine. In this way unbiased results are obtained and the latest and most economical way of treating each kind of ore secured. If they so desire miners or operators may accompany samples and observe the various processes involved, thus familiarizing themselves with all details and availing themselves of the knowledge of skilled manipulators of ore-dressing machinery.

*Cyanide process.*—There has been recently erected by the school of mines a complete experimental cyanide plant after special and improved designs. Practical working tests in large or small quantities of ores and tailings by the cyanide process may be made. This plant is very compactly and conveniently arranged and will treat lots up to 5 tons. A large plant of similar character is also planned for more extensive work.

All known processes of leaching are also amply prepared for, including especially chlorination and the theosulphate methods. Quantities of ores or tailings up to 1 ton are treated.

*Metallurgical methods.*—Full facilities are provided for laboratory experimentation of the proper metallurgical treatment of specific ores. Plans are nearly completed for making tests of this kind on a commercial scale.

*Free determination of minerals.*—It has been the custom of the school to gratuitously make determinations of the nature of all minerals and rare ores from New Mexico, provided that a complete chemical analysis or assay is not required. Similar substances from other States will be determined in the same way when not interfering with the regular work of the laboratories. Tests for the common metals must of course be regarded as assays and as coming under the rules governing such.

The name of the locality where the mineral was found and of the mining claim should be given, in order that it may be made a matter of record for enabling the value and distribution of the mineral wealth of the Southwest to be better understood.

*Water analysis.*—The chemical analysis of waters for city water supplies, boilers, and domestic use, and of mineral and mine waters, has of late assumed great importance. The chemical laboratories of the school are fully equipped and in the case of bad waters suggest remedies and methods to be used to improve the waters for specific purposes. A large number of analyses of waters from the Southwest have already been made, and very interesting results obtained. Eventually it is expected to incorporate the results of some of these investigations in a comprehensive report on the mineral waters of New Mexico.

*Fuel analysis.*—Another branch of the work which has been constantly receiving more attention has been an inquiry into the fuel values of the coals of the region. Complete analyses and heat tests have been made of some of the principal deposits. With the work already done the results of new analyses are made of special value on account of the comparative figures that can be supplied.

*Manufacturing chemical tests.*—In the mining regions of the Rocky Mountains occur, besides the metalliferous deposits, a large number of other sub-

stances which may be mined for their commercial values. The laboratories of the school are fully equipped to make determinative tests on the uses, methods of treatment, and values of these minerals.

#### ACTUAL MINING PRACTICE FOR STUDENTS.

The school owns an important property, the Torrance gold and silver mine, which it utilizes in instruction in practical mining.

The first attempt ever made to establish a practical mining laboratory in any educational institution by incorporating an actual working mine is believed to be that begun in the summer of 1902 by the New Mexico School of Mines. At that time the possibilities were first considered for the use of the Rio Grande Smelting Works at Socorro as a laboratory of practical metallurgy. As a companion experiment in mining education a laboratory for practical mining was thought of. Considerable time was spent in trying to find a suitable property upon which a model mine could be developed, which would likely grow into a paying proposition and which at the same time would come within the limits of the school's purse. After thorough examination a small but promising property was finally acquired and plans made for developing it.

Soon afterwards a larger and more attractive mine was found to be on the market and only a short distance from the college campus. Mainly through the generosity of Mr. W. H. Byerts, one of Socorro's prominent citizens, this property, with all its appointments, has come into absolute possession of the school. This property was long known as the Torrance mine. Included in the deal is a bond and lease for a period of years on five adjoining properties.

The Torrance gold and silver mine has long been known as one of the most famous in the Southwest. It has a remarkable record. Already it has produced nearly \$1,000,000 in values. This mine presents one of the finest examples of timbering in New Mexico. The main opening is through a double compartment incline. There are five levels. Important ore bodies are opened up. Great variety in mining illustration is shown. There are fine stopes, and on the fifth level a shaft. The geological structures associated with ore deposits are seldom so well displayed. The problems presented are many. Variations innumerable are found in contiguous properties. The hoisting house is substantially constructed and the ore bins are capacious and well built.

Exceptional opportunities are thus offered students to carry on actual mining operations. Sinking of shafts, driving levels, constructing winzes, advancing development work, and stoping are included. Timbering in its various phases is undertaken. Complete surveys are made and maps drawn. The mine is thoroughly sampled and the samples assayed. The geological conditions are carefully studied, both underground and on the surface. There is practice in reporting on mining properties and the evaluation of the ore bodies. Plans and specifications are drawn up for all appurtenances connected with the operation of the mine under varied conditions and in relation to the milling. All other work of a engineering character receives attention.

#### STUDENT LOAN FUNDS.

During the year just ended several loan funds have been established for the purpose of aiding worthy students who might, without such assistance, be unable to complete their courses in this institution. The conditions governing the distribution of the different loan funds are essentially the same in their main features, though differing somewhat in details.

Assistance thus offered is placed upon a strictly business basis, without thought of charity. Attached is no suggestion of a gift outright. Opportunity is presented the student to pay his way, depending upon no one but himself. Moreover, it is assistance given at a time when the student most requires it.

The loans are made for three, four, or five years, and bear 6 per cent interest. The accruing interest is added to the loan fund when the amount of the loan matures. Then the interest as it accumulates goes toward enlarging the fund which will from time to time receive additions from other sources. With this gradual expansion of the loan fund its usefulness will be greatly broadened.

An important condition governing the loans is the previous record of the student as to his character and his work.

*Byerts loan fund.*—This fund has been established by Mr. William H. Byerts, of Socorro, and important augmentations are promised.

The individual loans are of \$50 and \$100. In distributing the fund preference is given those students who have most nearly completed their courses.



The loans are made upon the recommendation of the faculty by the board of managers, each note bearing 6 per cent interest and maturing in from three to five years.

Preliminary to receiving a loan the student shall file recommendations from at least two responsible persons in no way connected with the school. In all cases preference will be given those students nearest their time of graduation. A very essential condition of the allotment is the previous good record of the student.

All accruing interest goes into the general loan fund for the benefit of other needy students.

*New Mexican loan fund.*—As a further aid to needy students in New Mexico 24 special loans have been provided for each year. The amounts of these loans vary somewhat, but each covers the amount of all tuition and laboratory fees for the year.

Loans from this fund are available for one student from each county in New Mexico, and are allotted on the same conditions as other aid from the general loan funds.

#### BEGINNING OF A SYSTEM OF SCHOLARSHIPS.

The fellowships, scholarships, and prizes of the New Mexico School of Mines are instituted solely for the promotion of scholarship. They are awarded wholly on the basis of proficiency. The essential feature of these honors is to aid men of talent to further achievement in the more purely intellectual pursuits. In bestowing these honors it does not necessarily imply exemption on part of the holders from the payment of fees, though this may be done by special vote of the board of trustees.

The system of fellowships was established for the express purpose of encouraging students to continue their studies along broad lines and to devote themselves to the investigative phases of the mining sciences and arts. These fellowships are open to graduates of the New Mexico School of Mines and of other colleges.

In the completed system there is contemplated the establishment of ordinary fellowships and traveling fellowships.

Through the generosity of the members of the board of trustees and others the New Mexico School of Mines has been able to establish a system of scholarships. Some of these scholarships are open only to residents of New Mexico; in accordance with the regulations hereinafter mentioned, a certain number of other scholarships may be assigned to students whether or not the applicants be residents of New Mexico.

These scholarships are awarded annually as honors. The main object sought in the bestowal of these honors is the encouragement of scholarship among those who wish to prosecute studies related to mining in this institution.

In the awarding of the scholarships the factor of giving financial aid to the student is not taken into consideration, though in any case the pecuniary emolument may be waived for the benefit of others and the name of the scholar still retained on the honor list.

In order to still further cultivate the spirit of independence in the student upon whom a scholarship may be bestowed, he is expected to assist in some way in connection with the work of the school. The details of this service may vary with the different holders. Whether assistance be in the laboratories, library, or museum, in no case will it be allowed to exceed the equivalent in value of what such services ordinarily demand. Two classes of scholarships have already been provided for.

*State scholarships.*—Fifty scholarships, each yielding about \$100 annually, are open to students living in the United States. They are held for one year. These scholarships are assigned some time during the first semester of each academic year.

There is one scholarship for each State in the Union. The student from each State passing the best examination for entrance to the school, or to advanced standing, or furnishing evidence of best qualifications to carry on the work in this institution is awarded the scholarship for that State. State scholarships are bestowed upon the following conditions:

1. The application must be made in writing before May 1 of the academic year preceding that in which the scholarships are awarded.

2. Accompanying the application should be a short statement of the candidate's previous training and an indication of the course he wishes to pursue.



3. Applicants for the State scholarships are expected to proceed to the engineer's degree.

4. Holders of scholarships are not exempt from laboratory fees.

In case in any one year worthy candidates do not offer themselves from any one State, the board, at its option, may reserve such appointments or award them to applicants from other States, preference being given to students who already hold college degrees or who present evidence of unusual attainments in mining studies.

*New Mexican scholarships.*—Forty scholarships, each yielding \$25 a year, are open to students who are actually residents of New Mexico. They are good for one year, and are bestowed at the beginning of each academic year.

These scholarships are awarded to the two students from each county in New Mexico passing the best examinations for entrance, or for advanced admission to the school, or presenting the evidences of best qualifications for carrying on the work of the course selected.

Examinations must be taken at the regular time, at the end or at the beginning of the academic year. As in the case of the State scholarship, the New Mexican scholarships are bestowed as honors—as incentives to good work. Holders of scholarships are expected to proceed to a degree.

*Allis-Chalmers scholarship.*—To one member of each year's graduating class there is offered by the Allis-Chalmers Company, manufacturers of mining and heavy machinery, with large works at Chicago, Milwaukee, and Scranton, an opportunity of four months' study and employment in any of its plants and an emolument of \$150.

This scholarship is awarded by the board of trustees on the recommendation of the faculty from those graduates of the year filing application before the 10th of June. The opportunity is an exceptional one to observe and study the building of all kinds of modern mining and metallurgical constructions.

*Brown gold medal.*—Hon. C. T. Brown, of Socorro, offers annually a gold medal to the student who during a full year's work has shown the greatest proficiency in the subject of assaying. The medal is publicly awarded at commencement in June of each year. Last year the medal was received by Mr. William E. Hult, of San Antonio, N. Mex.

#### PUBLICATIONS OF THE SCHOOL.

The results of the more productive and technical work of the school, which has attracted more or less wide attention, have been published in the transactions of the learned societies, in engineering journals, and scientific magazines. These memoirs and papers published by members of the school's faculty during the past year number over 50.

The school of mines issues a number of publications. These include the Mining Quarterly, the Annual Report of the President, the Annual Register, the Department Circulars, and the Reports of the Geological Survey.

As considerable emphasis is laid upon original investigations among the instructors and advanced students, encouragement is given to undertake this higher work by providing a ready means for disseminating the results as they are obtained. The more important papers read before the various societies in the school are often included, together with notes and notices of systematic work being carried on, and other information relating to progress of the school.

The description of new methods of ore treatment experimented upon in the metallurgical laboratories, successful applications of recently devised processes of extracting the metals from their ores, improvements in handling ores and in mining, which have come under the observation of the mining men connected with the school, and other similar notes of general interest to the mining profession are included.

The president's report to the board of trustees is issued at the close of each academic year. It reviews in considerable detail the work of the school for the year, formulates the plans for the ensuing sessions, and sums up the progress of the school in general. It may also contain the commencement address and brief mention of notable lectures delivered at the school during the year.

The yearly catalogue contains lists of the officers and students; complete statements regarding the courses of instruction; the regulations and work of the institution; accounts of the laboratories, buildings, equipment, libraries, and museums; and all information of a general character regarding the school. It is issued at the close of the academic year.

Department bulletins are issued at irregular intervals during the year as occa-

sion demands. They are numbered consecutively. The matter contained relates specifically to the details of the work in the various departments of the school, synopses of public lectures and addresses, and all miscellaneous announcements and statements.

The geological department of the school has been for some time engaged upon collecting data for a geological, mineral, and mining map of New Mexico, and in gathering materials for an exhaustive account of the mineral resources of the region. A large amount of reliable information has already been obtained. A preliminary geological map will soon be ready to issue.

Detailed reports on the mineral industries, the mining methods, and the economic resources are contemplated. A report on the coal deposits is already well along and will be ready for publication in the near future. A volume on constructional materials has been started. Notes on the various mining districts, the occurrence and distribution of the ores, and the best manner of treating the ores are beginning to assume large proportions. The reports of this series will be issued at regular intervals as opportunity and the completion of the various lines of work permit. It is expected that the first report will be printed and ready for distribution during the coming year.

#### PRACTICAL WORK OF THE SUMMER SCHOOL.

A "summer school," in the ordinary meaning of this term, is not held at the school of mines. As may be noted by reference to the calendar, the academic year is divided into two semesters of seventeen weeks each. The summer term of sixteen weeks counts as a full half year. While no regular lecture courses may be given during this session, the work of the school goes on under the direction of a committee of the faculty.

For the summer term is reserved all such work as demands much time, uninterrupted by diversions. Among the courses that are best carried on at this time are ore dressing, various metallurgical processes, assaying, railroad land and mine surveying, mine inspection, certain phases of design, engineering experimentation, geological field work, and thesis work. Certain courses in drafting, certain laboratory work, and mapping may also be advantageously engaged in.

Not all of the work of the character mentioned need be done under the direct supervision of the instructor in charge. Nor is it necessary that some of the more advanced phases of it be done altogether in this institution. Work may be done outside with the advice of the professor under whom the course is usually conducted, and he need be consulted only so often as he may think advisable. These are cases in which the student attaches himself to the field party of a topographical, hydrographic, or geological survey, when such work comes directly in line with his regular work.

In surveying and engineering advanced men have in the past found ready employment in various capacities, not only getting a good drill in actual practice, but good pay for their services. Demands for capable men for each season usually exceed the supply. There is every reason to believe that in the future the call for properly trained men will increase rather than diminish.

While in the metallurgical work no positions in the various smelting works have been opened in the past, it is expected that ample provision will be made hereafter for willing students whereby they may obtain a varied experience and at the same time receive adequate compensation for their efforts.

The outlook for the coming season is that a limited number of men may be taken on the geological or topographical surveys.

Faithful accomplishment of field duty during the summer term enables a student to add a half year's work to his credit in the regular courses of the school.

In pursuing the regular professional summer work in the field, whether for surveying, mining, or geological mapping, a camp is established at some convenient place and the work carried on systematically day after day in regular fashion until satisfactorily completed, when the camp is moved to another advantageous locality. The different camps may be adjacent or far removed from one another. Moreover, the kinds of effort expended at the various camps may be wholly different. One of the main objects is to give the student as broad and as varied an experience as possible. By these courses the student is given far greater opportunities for extended and continued field practice than he is possibly able to have during the other portions of the year. The expense attached to the work of the summer term is usually no greater than for either the first or second semesters.



In a similar manner the professional work in the summer term is conducted in mining and metallurgy. A party of students and their instructors organizes itself and lays out the plans for visiting the various mining camps, mills, reducing works, or other localities of special geologic interest. After the party establishes itself in a particular district, systematic studies of all the details connected with mining methods, the manner of laying out mines, the underground surveys, and the treatment of the ores are taken up in turn before passing on to another district. The same general scheme of practical instruction is followed in the case of the sojourns at smelting works and in the field especially visited for the geological features presented.

Special stress is laid upon the proper keeping of notes. These are fully written up each day. They are made use of later as a basis of other work in connection with the regular courses. Besides, if carefully kept, they prove valuable references in later years.

It may be, and in all likelihood will often happen, that the summer field parties in mining, metallurgy, and geology will not be kept intact as a single organization, but that there will be formed three entirely distinct groups, each having widely different fields of action.

The details of the summer work are given in special bulletins several weeks before the close of the second semester.

### THE NEW MEXICO MILITARY INSTITUTE AT ROSWELL.

[James W. Willson, superintendent.]

The success of the New Mexico Military Institute thus far has had no parallel in our knowledge, conditions considered; but it has been due chiefly to the fidelity and patriotism of our citizens throughout the Territory, to the existing need for just such a home training school for boys, and to providential good fortune.

The demand for admission during the past session far exceeded the living capacity, and much good material was refused on account of limited quarters. Although money has been saved and a new building erected during each vacation since the school was opened, in 1898, it seems impossible to get sufficient quarters for all wishing to partake of the benefits of the institute.

It is the policy of the institute to admit all applicants who are residents of New Mexico so long as they are mentally and physically qualified, and when the quarters are all engaged to reject those applying from other States. For this reason we do not show up as many students from other States as would otherwise be the case.

The institute now has seven buildings, which are used as follows:

The main building, a large four-story brick, is used both as a barrack and as an academic building. The third and fourth floors consist of two large halls, each surrounded by 14 bedrooms, the first and second floors being used for class rooms, laboratories and libraries, baths, etc.

The second largest building is the new mess hall, which is just being completed, and consists of a basement for storage, bake shop, and sleeping rooms for domestics, of a large dining room, kitchen, and pantries. The mess hall is 84 feet long by 42 feet wide and has the capacity to seat 300 cadets.

The other five buildings are substantial frame structures, consisting of 23 rooms for cadets' quarters, the superintendent's residence, the administrative building, a thoroughly equipped and up-to-date gymnasium, and a hospital.

The campus and grounds consist of 40 acres, 20 of which is surrounded by trees set to grass and flower beds.

While the buildings and equipments are ample for the number of cadets and officers maintained, the growth of the school is greatly hindered by the lack of more commodious quarters.

The academic work is thorough and embraces all of the studies usually taught in secondary schools, especial attention being paid to English, Spanish, Latin, and mathematics, all of which are carried through the entire course. Great attention is also paid to technical work, and thoroughly equipped laboratories, both chemical and physical, are being installed. The course in mathematics is especially strong, and practical work is given in both surveying and railroad engineering.

The military department has maintained its usual high standard, and during last session the battalion, numbering 120 cadets, was divided into three companies and a band and thoroughly drilled in infantry tactics. The companies were commanded by cadet officers, and drilled with the precision of regulars.



The first class consisted of 8 young men, all of whom completed the required course of study and received their diplomas as graduates of the New Mexico Military Institute May 18, 1904.

The enrollment during the past session was not only greater than heretofore, but the average age of the students was higher, and a greater percentage of them were prepared for advanced work. The preparatory department was composed of only 20 boys, and some of them were over 18 years of age, but had been deprived the opportunity of early training. Such students generally prove to be very satisfactory, as they are old enough to realize the value of an education, and make rapid progress.

The health of the cadets has been carefully attended to by a surgeon regularly employed, while the enforced exercise, baths, diet, study, and sleep have placed the boys, without exception, in perfect physical condition. There has never been a serious case of sickness among the cadets.

Following is the table of receipts and disbursements from June 30, 1903, to June 30, 1904. All original bills are required to be itemized and receipted, are carefully filed and preserved, and are subject to inspection at any time:

## RECEIPTS.

Balance on hand, land sales and leases fund, June 30, 1903-----	\$4. 38
Balance on hand, levy fund, June 30, 1903-----	12. 57
Balance on hand, tuition fund, June 30, 1903-----	2,364. 73
Received from Territorial auditor from June 30, 1903, to June 30, 1904, levy proceeds-----	11, 693. 62
Received from Territorial auditor from June 30, 1903, to June 30, 1904, land sales and leases proceeds-----	11, 127. 20
Received for board and tuition, etc., from June 30, 1903, to June 30, 1904-----	19, 545. 80
<b>Total receipts-----</b>	<b>44, 748. 30</b>

## DISBURSEMENTS.

Tuition-----	\$237. 50
Maintenance and supplies:	
Advertising-----	\$248. 03
Athletic supplies-----	177. 35
Commissary-----	7, 244. 51
Expense-----	715. 08
Fuel-----	2, 463. 20
Hospital-----	204. 00
Insurance-----	70. 00
Laboratory-----	44. 65
Laundry-----	1, 666. 14
Light-----	1, 025. 66
Military supplies-----	149. 11
Office-----	428. 30
Repairs-----	255. 49
Salaries-----	6, 444. 47
Stable-----	362. 33
Wages-----	2, 890. 85
School supplies-----	1, 073. 72
<b>Property:</b>	<b>25, 462. 89</b>
Acetylene-gas plant-----	318. 00
Buildings-----	5, 389. 98
Furniture and fixtures-----	1, 745. 30
Improvements-----	1, 160. 09
Library-----	127. 05
Movables-----	38. 50
Sewer-----	51. 08
Tools-----	13. 25
Waterworks-----	87. 94
<b>Balance on hand, land sales and leases fund, June 30, 1904-----</b>	<b>8, 931. 19</b>
<b>Balance on hand, levy fund, June 30, 1904-----</b>	<b>3, 798. 81</b>
<b>Balance on hand, tuition fund, June 30, 1904-----</b>	<b>582. 11</b>
<b>Balance on hand, tuition fund, June 30, 1904-----</b>	<b>5, 735. 80</b>
<b>Total disbursements-----</b>	<b>44, 748. 30</b>

## NEW MEXICO NORMAL UNIVERSITY AT LAS VEGAS.

[Edmund J. Vert, President.]

The sixth academic year of this institution closed June 3, at which time 7 students were graduated, 5 from the normal course and 2 from the academic. One of the number received a diploma from both courses.

The faculty for the ensuing year is as follows: Edmund J. Vert, Ph. D., Pd. D., president, pedagogy; Albert S. Otto, M. S., algebra, geometry, and physics; Myrtle A. Ball, A. M., Latin; Mareth Furro, music, physical culture, and method in music; Lora Levens, Ph. B., principal of training school; Helen G. Carrick, English and public speaking; Ruth Tefft, Pd. B., Spanish, manual training, and physical geography; Eleanor A. Thomas, Pd. B., psychology, pedagogy, and professional reviews; Eva E. Mohr, A junior department; Mary Huguana, B junior department; Genetta Bushyager, Pd. B., grammar grade critic and drawing; Florence M. Quigg, primary critic and kindergarten.

## I.

The year was one of steady and substantial growth in the internal organization of the school. An effort was made so to relate the various departments of work as to make all contribute to a common end. The necessity of thorough and systematic work as a means of realizing, even approximately, the end of education has been effectively emphasized with our student body. Character is not developed in a vacuum, but through a wisely directed effort in an intensely concrete world. In practical life certain tangible results must be produced within given periods of time. Attractive as may seem the doctrine that "the school is not merely preparation for life, but is life," nevertheless it does not follow that all of life consists of sugar-coated "interests." As a matter of fact the truest present life, as well as the one which best prepares for the future, is one in which there is such an intensity of purpose in present duty as to lead to oblivion regarding many things which annoy the half-occupied mind.

Moreover, it is an axiomatic truth in education that the product is like the activity by which it is produced. In order that the training which results from instruction shall possess those qualities which are necessary in any present-day walk of life, that instruction, and the manner and the spirit in which it is given, must have those qualities. Uniformly good and thoroughgoing preparation by the student and a complete daily test of such preparation stand first among the conditions necessary to that kind of education which the times demand.

The practical application of these principles has received emphasis in this institution the past year in requiring that a student shall have a full creditable standing in each branch each quarter, a standing above passing one quarter not being considered as an offset against a low standing in another quarter. In consequence of the adoption of this regulation a strong impetus has been given to uniformly good daily preparation, and a commendable respect for accomplishing something worth while in the branches undertaken.

## II.

The double function of the normal school, namely, to give academic instruction, and to give both instruction and training in the theory and art of education, which is recognized in States having a well-developed public school system, on account of the small number of elementary and secondary schools that have the equipment to do satisfactory work in their respective spheres, is made particularly conspicuous in New Mexico. That elementary instruction may afford the proper foundation in knowledge and mental discipline to prepare a pupil to pursue secondary branches to advantage, the instruction must be not only thorough and systematic, but it must be continued for a sufficient length of time to form certain habits of mind indispensable in all education.

The consensus of opinion in this country is that this form of education should continue for a period of eight years, or through what is known in the public schools as the "grades." Likewise, secondary instruction which meets the requirements of practical life or of our best colleges and universities must produce something more than a mere smattering in secondary branches. Organic knowledge, the only kind which produces the proper mental discipline in the effort of acquiring it, can be produced only by habits of thinking which require time and continuous effort for a period of years in their formation. It is on account of these fundamental facts, combined with local conditions in New Mexico, that special provisions are necessary to meet the educational demands.

In many localities throughout this Territory there are children who do not find in their local schools the educational opportunities suited to their age and advancement. On account of the short annual session of many of the local schools, boys and girls reach an age beyond that of children of like attainments in well-graded schools open nine or ten months in the year, yet hundreds of them are anxious for, and are willing to make the necessary sacrifice to secure, a better education. If these children, however, should go to the nearest city schools, they would be graded with children several years younger than themselves. They have personal pride, though they do not have the education, and, therefore, are willing to forego the advantages of a better education rather than to be subjected to the humiliation of being classified in this way. It is not the business of the city school authorities to meet the special needs of children outside of their own district, and, as a result, the class of children to which reference has been made are left almost wholly without educational advantages.

Likewise, there are many children in localities where no instruction is given in the local school above the sixth grade whose parents have the means and would be glad to send their children to a good school, where they might finish an elementary course and enter upon secondary (high school) work, were such a school available. Since they do not find the educational advantages they need, in many instances their children reach adult life without the education which they might otherwise have had.

The gravity of the situation becomes more evident when it is understood that four-fifths of the teachers for the rural and small-town schools receive what education they have in schools of this kind. A large per cent of them have never had any form of instruction above such as is given in a fourth or fifth grade in well-regulated schools, and even this education has been spasmodic and indifferent. That the quality of teaching in the rural and small-town schools, under such a condition of things, should be and remain far below standard is evident.

Believing that it is the peculiar province of a Territorial institution to take up education where local schools discontinue, the management of the normal university have thought it their duty to meet as fully as may be the needs of this class of children. In accordance with this view of the matter, a complete public school department has been organized, in which any child 6 years old and upward can procure a thorough and systematic education, under conditions that relieve him of every possible embarrassment in case he is out of grade as regards age. This department is in no way connected with the training school or with the normal department, thus avoiding any sacrifice of interests of the children in any of these departments. The department is organized in three divisions, as follows: The B junior department, which receives children from the first to the seventh grade, inclusive; the A junior department, which receives regular eighth-grade pupils; and the academic department, which offers a four-year course to those who have completed the common branches. For all of these twelve years of work trained and experienced teachers are employed, and every opportunity is afforded to receive such an education as is obtainable in the best city schools. It is reasonable to believe that when these opportunities are known through the Territory, a large number of children, who have not proper home educational advantages, will avail themselves of the privileges here offered.

### III.

In some localities in New Mexico the habit still prevails of sending young men and young women to eastern institutions for their secondary and collegiate education, overlooking the fact that in both of these departments the best of advantages are offered at home. The normal university offers an academic course equivalent to those offered by the best preparatory schools in the East, and prepares fully for all the regular courses in any college or university. The following is a synopsis of it:

#### BRANCHES IN ADVANCED NORMAL COURSE.

Algebra,  $1\frac{1}{2}$  years.  
 Geometry,  $1\frac{1}{2}$  years.  
 Latin, 4 years.  
 Spanish, 2 years.  
 English, 3 years.  
 General biology,  $\frac{1}{2}$  year.  
 Botany,  $\frac{1}{2}$  year.  
 Physiology,  $\frac{1}{2}$  year.

Physics, 1 year.  
 Chemistry, 1 year.  
 Physical geography,  $\frac{1}{2}$  year.  
 History, 2 years.  
 Civics,  $\frac{1}{2}$  year.  
 Psychology,  $\frac{1}{2}$  year.  
 Manual training, 2 years.  
 Art, 2 years.

NOTE.—The course in the A junior department prepares for this course.



This schedule includes all branches offered in the best secondary schools. From this list the student selects, under certain conditions, four studies or their equivalent, each year, which in four years enables him to complete the course. This is the standard number of studies per pupil in the best preparatory schools, and four years is the standard time in which to complete such a course. In this institution 75 is the lowest creditable standing, and in each quarter's work it is necessary to attain that grade, good work one quarter not being offset for poor work in another.

All recitations are forty minutes in length and all occur five times a week. Every convenience of library and laboratory is offered for giving instruction in accordance with the most approved methods of secondary education. One of the principles followed by all teachers in this department is that daily preparation shall be uniform and thorough and that every recitation shall be a test of these qualities.

Exclusive of good health, among the conditions for completing this course in four years are the following:

1. The completion of the standard course of the primary school (grades) through the eighth grade. The course in the grades must be pursued systematically, in order to give the student such a foundation in knowledge and mental discipline as to enable him to pursue this course profitably. More than 50 per cent of the pupils who attempt our academic course are retarded in their progress by insufficient preparation in some of the elementary branches.

2. Strict attention to work during recitation and during the time of preparation, whether that time be inside or outside of school. This fact carries with it the further condition that the student be regular in attendance, prepare his lessons thoroughly and every day, and that he be free from outside distracting influences.

The experience of the past year has shown that it is necessary to comply fully with these conditions in order to cover satisfactorily the work of any year as offered in the course given above.

During the coming year two systematic courses in physical culture—one for boys, the other for girls—will be carried out. Under the direction of the teacher of public speaking, students will have an opportunity to take such instruction in public reading and speaking as they may be prepared to do. A limited amount of this work is required of all students. All students interested in vocal music have an opportunity to take training in chorus work. This recitation occurs twice a week and is one of profit and enjoyment to all music lovers.

At opening exercises the coming year our students will have an opportunity to hear read some of the best productions of American, English, Roman, and Greek literature. The aim will be to give an appreciative understanding of a few of the great productions. The readings will be accompanied by such an account of the time, the author, and the production as to make it valuable from the double view point of literature and entertainment.

#### IV.

The reorganization of the normal department began last September, and the beginning of the next academic year will witness its completion. In all changes effected the particular conditions which exist in New Mexico have been constantly kept in mind.

That New Mexico is in need of a much larger number of teachers, with such qualifications as are required for a first-grade teacher's certificate, is evident to anyone acquainted with educational conditions in the Territory. It is also an obvious fact that a close connection naturally exists between the certification of teachers and the work of the normal university. This institution should recognize the legal requirement for teachers' certificates, and should offer every opportunity to teachers to prepare to secure the same. In accordance with this view the following course has been adopted:

#### ELEMENTARY NORMAL COURSE.

##### *Junior year.*

*First semester.*—Literature and reading, arithmetic, elementary science, grammar and composition, geography.

*Second semester.*—Geography, grammar and composition, literature and reading, arithmetic, elementary science.

*Senior year.*

*First semester.*—Algebra, United States history, pedagogy, biology, physiology.

*Second semester.*—Biology, pedagogy, algebra, United States history, observation.

This course includes all branches for a first-grade teacher's certificate, and affords the student an opportunity to prepare in a thorough and satisfactory way. If he so elects, he may observe work in the training school during his senior year, thus in some measure compensating for the lack of a more extensive course in the professional branches. Though this course has but recently been adopted and will not go into effect until September, a sufficient number of applications to pursue it have been received to make it evident that it will meet with the hearty approval of a large number seeking to secure first-grade certificates.

## V.

In the best city schools in New Mexico, however, a demand exists for teachers who have not only the academic qualifications, but who have had a full course of instruction in professional branches, training in the best methods of presentation of subject-matter, and experience in managing a school.

At present more than 75 per cent of teachers for schools requiring these qualifications come from schools outside of this Territory. Though they are competent, but a small per cent of them come to New Mexico to make this their permanent home. As a consequence, not only does their service lack the spirit of fine finish and permanency which it would otherwise possess, but the efficiency of the schools is much reduced through frequent change of teachers. To improve the condition of education in this respect it is necessary to give a training to resident teachers fully equal to that offered in the outside normal schools, with which the institutions of New Mexico are now competing. It was to meet this demand fully that our advanced normal course was planned. In every respect it is equal to the most advanced courses which are required for life certificates in eastern normal schools. In the amount of professional work required and in the time necessary to spend in the training school the requirements of this course are somewhat in excess of those in many eastern normal schools.

Three full years of the academic course is a prerequisite to entering upon the advanced normal course. The first year is given to music, drawing, psychology, the study of methods, and a searching professional review of the common branches; and the second to the completion of the work in methods, advanced pedagogy, and practice in the training school under the direction and criticism of trained and experienced critics. Not less than a half day throughout the senior year is required to be spent by the student-teacher in full charge of a room of 24 pupils. The following is an outline of the course:

## ADVANCED NORMAL COURSE.

*First year.*

*First semester.*—Drawing, music, psychology, school management, methods.

*Second semester.*—Pedagogy, history of education, drawing, music, methods.

*Second year.*

*First semester.*—Advanced pedagogy, methods, practice in training school (half day).

*Second semester.*—Advanced pedagogy, methods, practice in training school (half day).

The term "method," as here used in connection with any branch, includes, (1) a critical examination of the subject-matter of the branch as it is usually taught in the public schools; (2) the study of the order in which that subject-matter should be presented, and (3) the devices best suited to a proper presentation of it. The study of methods in this course includes method in number, arithmetic, reading, geography, spelling, language and story, grammar, drawing and form, nature study, and music. The course leads to an advanced normal diploma, and is equivalent to a life certificate in any State.



This course has several points of special value—(1) a good academic (high school) course is required before the student enters on his professional work; (2) two full years are given to theory and practice, thus giving full and ample preparation on the professional side, and (3) the student is fully equipped on the side of theory before he begins his practice work in the training school. Under this arrangement his experience in training has the greatest possible value, and the children in the training school are protected from inefficient teachers.

## VI.

Several important changes have been made in the organization of the training school. It now consists of a kindergarten department, which offers one year of instruction of children past 5 years of age, and of the first, second, third, fourth, fifth, sixth, and seventh grades of the regular elementary school. The number of pupils in each grade is limited to 12, and there are two grades in each room, thus making a schoolroom of 24 pupils. The course in this department includes those branches pursued in the best large and progressive city schools. The aim is not only to give the student-teacher training in actual teaching and management, but also to give him a conception of what a well-regulated school consists.

One of the fundamental principles on which the work of this department is based is that the educational interests of the child taught in the training school shall not be sacrificed in order to give student-teachers an opportunity to learn the art of teaching. The student-teacher is not admitted to practice in the training school until he has had a period of observation and the full course of instruction in theory, nor is he permitted to give instruction in only one or two branches a day, thus requiring the pupils in the practice school to pass under the instruction of a half-dozen or more training teachers daily. All instruction in theory is completed before the student-teacher is admitted to the training school and he has charge of all the work in a room for a full half day.

All students in the advanced normal course take a course in kindergarten theory, and those who propose to make a specialty of primary work spend at least one-half of the time required for training school work in giving instruction to kindergarten and first-grade children.

## VII.

Early in the school year which has just closed it became evident that there was a demand in New Mexico for a summer school for teachers. Accordingly, there was sent out on the 16th of March a circular announcing that such a school would be organized, and would hold a session at the normal university beginning June 6 and closing July 29. Four members of the regular faculty were selected to give the instruction and the course offered consisted of graded work in the following branches: Reading, penmanship, orthography, grammar, geography, arithmetic, physiology, civil government, United States history, pedagogy, and the elements of botany, zoology, physics, and algebra. From one to three classes were organized in each branch, and in those studies in which the student wished special instruction he was permitted to enter more than one class taking that study.

The circular announcing the summer school also contained the statement that classes would not be hurried over a large amount of work without regard to quality. Accordingly, four studies which required preparation was the maximum any student was permitted to undertake.

The total enrollment was 37, the average attendance being 31. The enrollment by counties was as follows: San Miguel, 11; Mora, 6; Chaves, 4; Leonard Wood, 4; Colfax, 3; Otero, 2; Luna, Eddy, Grant, Union, and Santa Fe, each 1; and 2 came from Trinidad, Colo.

As indicated in the circular, the aim was to do real and substantial work, and not to make it merely a cramming school to prepare for examination. The students entered into the spirit of the school and accomplished more during the eight weeks than the faculty anticipated. The following is a schedule of the classes with the portion of the branch covered:



Studies.	Portion covered by class.
Arithmetic, A .....	Percentage and its applications with a rapid study of proportion, square and cube root.
Arithmetic, B (I) .....	Common and decimal fractions, denominate numbers, and measurements.
Arithmetic, B (II) .....	A fairly careful study of the principles of and fundamental operations in common fractions.
Algebra .....	A rapid review of the fundamental operations; factoring; fractions; L. C. M.; H. C. F.; elimination; one and two unknown quantities; square and cube root.
Botany-zoology .....	(Four weeks on each.) Ecology as treated in Coulter's Plant Studies, supplemented by topics and lectures. A rapid review of Jordan and Kellogg's Animals.
Civil government .....	A general view of departments of our Government, supplemented by topics on government in general.
Grammar (B) .....	A careful study of the parts of speech, except the verb, which was not completed.
United States history .....	A careful study of the periods of discovery, settlement, and colonial development.
Orthography (I and II) .....	I. Pronunciation, spelling and meaning of words in exercises 179 to 244, Aiton's Descriptive Speller. II. Same, with a select list for fourth grade.
Pedagogy .....	Art of Study to Chapter IX; study of topics outlined for elementary pedagogy in Institute Manual, with lectures on "the recitation."
Physiology and hygiene .....	A general view of the whole subject, except the special senses. Colton's Text, supplemented by laboratory work.
Penmanship .....	(Part of period devoted to Orthography II.) Principles and advantages of vertical writing, supplemented by drills.
Physics .....	A rapid review of Carhart and Chute's High School Physics, omitting most of the problems.
Reading, A .....	Selections from Jones's Fifth Reader. Training in method of attacking a selection to get the thought-emotion elements.
Reading, B .....	Aim to train to read by reading. Work elementary. Hawthorne's Third Reader used.

Assurance has been given that had the drought not prevailed, the attendance would have been fully twice as great as it was. The hearty appreciation, however, which the teachers showed for our effort to aid them in their work led the board of regents on July 18 to take formal action in announcing that a summer session would be held again next year, and that in all probability the summer school would become an integral part of the normal university. The experience of this session has led to the following conclusion regarding work to be offered next year: (1) That there be double daily recitations in all branches required exclusively for a first-grade certificate; (2) that a larger faculty be employed in order that a closer classification may be made; (3) that a definite course in each branch be laid out and that it be organically related to the elementary and advanced normal courses, and (4) that an observation class be organized and placed under the instruction of one of the regular critic teachers, who shall give connected instruction in first-grade work for the purpose of illustrating in a concrete way primary methods.

### VIII.

For some time it has been evident that there existed a demand for a home study department in the normal university, in which, under the direction of the faculty of the university, students might pursue certain branches during such leisure time as they might have while engaged in other lines of work. Accordingly, the board of regents on the 18th of July adopted a resolution establishing such a department. The following is a copy of the prospectus which was prepared and distributed generally among the teachers of the Territory:

*New Mexico Normal University—Home study department, 1904-5.*

#### I. GENERAL PLAN.

*Purpose.*—The experience of educational institutions has shown that in many branches highly satisfactory work can be secured by correspondence. The work of this department is planned to meet the needs of the following classes: (1) Students of the normal university who are obliged to discontinue resident work temporarily, yet have time for study while absent. (2) Persons who expect to attend this school and desire to get advanced credit in certain branches. (3) All who wish a better knowledge of the branches offered.

*Method of management.*—(1) Each branch is divided into courses, a course being the unit on which all the work is based, and uniform in all branches. (2) Each course is divided into eight (teaching) lessons. (3) The completion of a home study course entitles the student to one credit in any of the regular courses in which that branch is included. (4) For each lesson the student is sent a lesson sheet, indicating the scope of the assignment, and containing questions to be answered. (5) A set of answer papers for each lesson sheet is forwarded to the normal university; these are read, criticised, and returned to the student with the lesson sheet for the next lesson.

*Time.*—The home study year is from September 1 to May 31, and all courses begun within that time must be completed before the latter date. Work may be begun at any time within that period.

*Completion of course.*—A course is not completed until the student has taken an examination on the same. The examination is held at the normal university, and at any time after the completion of the lesson work the student may elect.

*Number of courses.*—Not more than two courses, whether in the same or different courses, may be taken at the same time. A student may, however, complete as many courses as he chooses during the home study year.

*Text-books.*—The following text-books are used, and in most cases can be furnished to students second-hand at from one-half to two-thirds the list price: Wentworth's New School Algebra, Wentworth's Practical Arithmetic, Maxwell's Advanced Lessons in English Grammar, The Natural Advanced Geography, McMaster's School History of the United States, McCleary's Studies in Civics, Tracy's Essentials of Anatomy, Physiology, and Hygiene. The names of the texts in pedagogy will be furnished on application. The lesson sheets are based on these texts, and no others may be used.

*Fee.*—The fee for each course is \$4.75. A student may not register for less than a full course in any branch. Payment should be made by post-office money order.

*Relation to regular courses.*—Home-study work merely shortens the time necessary to spend in residence to complete one regular course, none of which can be completed by home-study work alone.

## II. COURSES OF INSTRUCTION.

### I. ALGEBRA.

*Beginning.*—This course begins with a careful study of the fundamental operations, which is followed by factors, least common multiple, highest common factor, and fractions. Emphasis is thrown on a clear conception of the thought and on accuracy and rapidity. (Course 2 in arithmetic is a prerequisite to entering on this course.)

*Second semester.*—The theory of the equation, the various methods of elimination, and equations involving one and two unknown quantities. The mere solution of the problems is not sufficient, but a full statement of the reasoning processes is required at every step.

*Advanced.*—This course begins with involution, and takes up successively evolution, theory of exponents, radicals, quadratic equations, and proportion. (Course 4 in arithmetic is a prerequisite to entering on this course.)

### II. ARITHMETIC.

*Elementary.*—(1) Notation and numeration; (2) fundamental operations; (3) bills and accounts; (4) properties of numbers; (5) least common multiple; (6) greatest common divisor. An accurate knowledge of the fundamentals of computation in arithmetic is necessary to a thorough understanding and proper progress in more advanced work. Experience shows that failure in work which follows is most often due to an insufficient knowledge of the elements. In this course emphasis is thrown on (a) clearness of conception and definition, (b) expression of the full reasoning process, (c) accuracy and rapidity of operation. (This course is a prerequisite to entering on course 2.)

*Fractions and denominate numbers.*—This course makes a thorough and systematic study of (1) common fractions; (2) decimal fractions; (3) denominate (simple and compound) numbers, and (4) measurements. The difficulties more than three-fourths of students have in arithmetical and algebraic computation is traceable to an insufficient knowledge of the fundamental principles of frac-

tions. (Course 1 is a prerequisite of this course, and this course is a prerequisite of course 2 in algebra.)

*Percentage.*—This course takes up the following: (1) Principles of percentage; (2) profit and loss; (3) interest; (4) bank discount; (5) true discount; (6) trade discount; (7) commission; (8) brokerage. In this course it is assumed that the so-called applications of percentage have difficulties that challenge the effort of the best pupils in the elementary and high school. Throughout the study of the subjects given above it is constantly kept in mind that this course is primarily for teachers, who should have not only a thorough but an exhaustive knowledge of arithmetic.

*Advanced.*—(1) Involution and evolution, with their application to square and cube root; (2) mensuration, involving the circle and square and cube root; (3) the metric system. (This course is a prerequisite of course 3 in algebra.)

### III. GRAMMAR.

*Elementary.*—This course is devoted wholly to a careful study of the parts of speech. With all that has been said about the study of grammar, teachers of English, Latin, German, and Spanish find that their chief difficulty arises from an insufficient knowledge of English grammar, and particularly of the parts of speech. In the normal university a thorough knowledge of English grammar is a prerequisite to the study of English, Latin, or Spanish.

*The English sentence.*—In this course the elements of the English sentence are first taken up in a systematic way, and this is followed by an extended study of the analysis of the sentence. The study of the sentence proper is followed by a study of English syntax, and a brief course in letter writing.

### IV. GEOGRAPHY.

*Course 1.*—(1) The earth as a whole—form, size, movements; upheaval of the land, erosion, climate, life, man; (2) a careful study of the physical and descriptive geography of New Mexico.

*Course 2.*—A systematic study of the following divisions: (1) The United States, (2) Europe, (3) Asia, (4) South America, (5) Africa, (6) Australia, (7) Insular Possessions of the United States.

### V. UNITED STATES HISTORY.

*Course 1.*—(1) The condition of Europe in the fifteenth century; (2) period of discovery and colonization, tracing casual relations; (3) the critical period; (4) Washington's administration.

*Course 2.*—A careful study of our national development from Washington's administration to the present time, with special emphasis on the period since 1880.

### VI. CIVIL GOVERNMENT.

*Course 1.*—This course consists of a careful study of Parts I and II of McCleary's Studies in Civics, followed by a study of the civil government of New Mexico.

*Course 2.*—In this course Parts III, IV, and V of McCleary's Studies in Civics are gone over carefully.

### VII. PHYSIOLOGY AND HYGIENE.

*Course 1.*—Beginning with the minute structure of the body, this course takes up successively the osseous system, the muscular system, and the digestive system, and considers their organs, their functions, and their interrelations.

*Course 2.*—This course begins with the circulatory system, and takes up the respiratory system, the nervous system, the protective system, and the special senses.

### VIII. PEDAGOGY.

Part of the work in pedagogy in the elementary course may be done in the home-study department. Further information will be given on application.

*General note.*—The condition imposed by any prerequisite course may be removed by passing a satisfactory examination on the work required. Special arrangements will be made to have this examination taken at or near the student's home. The fee for this examination is \$1.



## METHOD OF PROCEDURE.

1. Determine on the course you wish to take.
2. If there are any questions about it, write for information.
3. Send for application blank.
4. Fill the blank and return it, being sure to indicate whether or not you want books. On receiving the blank filled, we shall indicate whether or not your application has been accepted. If accepted, the notice of the same will indicate cost of books, fees, etc.
5. Remit money. On receiving the money we shall forward the first lesson sheet, books, envelopes, etc.
6. Prepare the first lesson as soon as you can, and forward it. The lesson papers will be read, criticised, and returned, and with them will be sent the next lesson sheet. Repeat this process with each lesson.
7. As soon as convenient after completing the eight lessons of a course, come to Las Vegas to take the examination and receive credit.

## CORRESPONDENCE.

1. All correspondence, including lesson papers, should be addressed to the president.
2. If further information is desired, be sure to write for the same.

EDMUND J. VERT, *President*.

## IX.

In view of the fact that no educational journal is published in New Mexico and that there exists a need for a periodical devoted chiefly to the purely professional side of the teacher's work, this institution will begin to publish in September the Normal University Bulletin. Ten numbers will be issued during the year, each of which will be devoted to one or more of the following subjects: (1) Methods in the common branches, (2) the principles of education, (3) school management, (4) educational helps for teachers, and (5) Territorial educational news.

## X.

At the opening of the normal university last September the rental text-book plan was adopted. All books used in the university are owned by the institution and rented to students at such a fee as to replace the books when they are worn out. Books to the amount of nearly \$1,400 have been purchased and are now in use in the various departments. The rental plan has the following advantages: (1) At a mere nominal outlay by the pupil he can get the use of two or three times as many texts as he could under the individual ownership plan. (2) Since no extra expense is involved, as soon as a set of books is worn out they can be replaced by the best new ones, thus enabling the university to use at all times the best texts in the market. (3) The cost per pupil is not more than one-fourth or one-fifth what it would be under the private ownership plan. (4) All students are supplied with an abundance of texts at all times.

The plan has worked to the entire satisfaction of the student body and the board of regents, and the fact of being able to furnish books at a merely nominal fee was no small factor in bringing about the eminently satisfactory work of the summer school.

## XI.

For some time this institution has felt the need of a girls' dormitory. At a recent meeting of the board of regents it was decided to rent a suitable house for this purpose, and accordingly arrangements were entered into with the owner of the residence at 1030 Sixth street whereby it passed into the possession of the board to be used for that purpose. That this action was a wise one is evidenced by the fact that during the summer school all rooms were taken, and by the further fact that several have been engaged in advance for next year.

## XII.

The growing needs of the university make it necessary that provision should be made at the earliest possible date for the following:

*1. A gymnasium.*—At the beginning of the last academic year systematic instruction was begun in physical culture. To meet the needs of this depart-

ment one of the largest rooms was fitted up and has been in use the whole year. This room, however, is much too small for the purposes of this department and, moreover, it is not possible to equip it with proper apparatus. It adjoins other rooms that must be used for class purposes, and on account of the noise incident to physical exercise and training the work in these class rooms is much retarded.

2. *A manual training room.*—The room now used for this purpose is one that belongs to the training school department. It adjoins the kindergarten room and opens into the main hall of the first floor. It is much too small for the purposes of this department, and on account of the noise incident to manual training work the department should be moved out of the training school. On account of the noise necessarily involved in both gymnastic and manual training work the two departments could be combined very conveniently in a single building.

3. *A separate boiler house.*—At present one of the rooms of the training department is used for the boiler of the heating plant. This department is in immediate need of this room, and a separate building should be constructed for boiler purposes.

The foregoing indicates something of the work this institution has undertaken. The hearty response it has met in each of its undertakings to reach in the most effective way the largest possible number of the youth of New Mexico indicates that its sphere is a growing one, and that nothing but vigilance will enable it to meet the duties imposed upon it by the growing needs of the Territory.

### NEW MEXICO NORMAL SCHOOL, AT SILVER CITY.

[C. M. Light, principal.]

Number of different pupils enrolled, 167; males, 62; females, 105. Four of these were post-graduate students; 17 special students, most of whom took the business course; 22 academic students; 29 professional students; 6 graduates, and 86 training school pupils. The training school comprises eight grades, the eighth grade being preparatory to the regular normal courses. The graduates now number 76.

The organization of the board of regents: Hon. W. G. Ritch, of Engle, president; Hon. E. M. Young, of Silver City, secretary and treasurer; Hon. John Corbett, of Deming; Hon. C. C. Shoemaker, of Silver City, and Hon. Percy Wilson, of Silver City.

Personnel of the faculty: Charles M. Light, Kansas Normal School and University of the City of New York, is president and instructs in psychology and pedagogy. Hugh A. Owen, B. S., Kansas State Normal School and Southwest Kansas College, has charge of the natural sciences and tool work. Miss Sarah A. Ellis, Ph. B., Kansas State Normal School, Cook County Normal School, and Franklin College, is instructor in English. The departments of Spanish and mathematics are conducted by Miss Alice R. Bailey, New Mexico Normal School and Leland Stanford Junior University. Physical training for boys, elocution and history are conducted by Edward F. Dunlavy of King's School of Oratory. The business and art departments are conducted by Ralph H. Agate, business accountant. Miss Anna B. Ashenfelter, Leland Stanford Junior University, has charge of Latin, physical training for girls, and instrumental music. E. L. Enloe, B. E., Kansas State Normal School, has been recently elected principal of the training school. Miss Jane Langley, who has served the school so well during the past four years as director of the kindergarten and primary methods, resigns and is superseded by Miss Mary E. George, Buffalo Normal School. Miss Keturah Swartz and Miss Mary Eckles, both of the New Mexico Normal School, will continue to serve as assistants in the training school.

The first term of the past scholastic year, consisting of twenty weeks, began Tuesday, September 1, 1903, and closed January 16, 1904, giving a holiday vacation of two weeks. The second term of twenty weeks began Tuesday, January 19, and closed June 2. Commencement week was devoted to a variety of exercises. Among these were the annual society contest, May 28; baccalaureate address, May 29; field day, May 30; public reception, May 31; senior class play, June 1; graduating exercises and alumni anniversary, June 2. The first term for the year 1904-5 begins Monday, September 5.

The following is a safe estimate of the school's property: Grounds, \$10,000; main building, \$20,000; laboratory and gymnasium building, \$10,000; training school building, \$8,000; furniture, \$4,000; apparatus, \$3,000; library, between



4,000 and 5,000 volumes, \$4,000. The board of regents are erecting a dormitory which will cost when completed \$12,000.

The work of the normal school may be classified into three departments—the professional, the academic, and the business departments. While these are coordinated as much as possible in the actual work of the school, they are, nevertheless, distinct departments of the school. It is true that special emphasis is placed upon the school's professional work, but it is for this very reason that it excels in the methods of presentation and in both the academic and business departments. The professional department aims to fit students for the profession of teaching and gives them a choice of two courses, the English and the English-Spanish. Latin, however, may be substituted for the Spanish. Both courses consist of four years' work. Graduates of accredited high schools and universities are given two and one year courses, respectively. We also give a two years' kindergarten course.

The academic work aims at general culture and gives the student a thorough knowledge of all those branches included under the term secondary education. Candidates for graduation from this department are fitted to enter upon a course of higher education.

The professional course may be supplemented by one year's work, designated as follows, the numbers in parentheses referring to the weeks the study is to be pursued: 1, Educational principles, methods, and practice teaching (40); 2, manual training, with special reference to teaching it (40); 3, advanced English and elocution (40); 4, natural sciences (20); 5, mathematics (20); 6, one language (20). Students will be allowed to select four of these studies. Any other arrangement must be made by special dispensation. Those desiring a kindergarten diploma must do the work for this special course. An academic student may take second year's work also, confining himself, as a rule, to the academic studies herein named.

The course of instruction offered students in the business department is substantially the same as that given by the business colleges of the country. The normal has a first-class teacher in the specialties known as typewriting and stenography. The course of study in this department consists of bookkeeping, penmanship, commercial arithmetic, commercial law, typewriting, stenography, business correspondence, forms, phrases, and terms. Special drills upon writing bills, receipts, notes, mortgages, etc., are given the student. Particular emphasis is placed upon the use of good English in letter correspondence. One important feature of this course consists of a series of lectures delivered to the students by business and professional men of Silver City. By such methods as these we hope to combine the practical phase of business education with the theoretical.

The normal, with the exception of the post-graduate course and the training department, attempts to confine its efforts to secondary education. Elementary schools desiring to articulate with it should complete in a satisfactory manner what is generally accepted as eighth-grade work. In order that pupils may not be conditioned on their entrance, this work must cover the following grounds:

*English.*—Reed and Kellogg's Higher Lessons in English through analysis and modifications of the parts of speech; Reed's Word Lessons, including the drills on word lists, a study of synonyms and word analysis; composition exercises, which will give the pupil ability to write good English; the study of five American classics—Snow Bound, Legend of Sleepy Hollow, Vision of Sir Launfal, Evangeline, The Great Stone Face, or their equivalents.

*Arithmetic.*—White's Practical or Wentworth's Practical completed.

*History and civics.*—The first book of the adopted two-book series on these subjects completed. Two lessons per week.

*Geography.*—Barnes's or Redway's second book completed, reviewed, and supplemented.

*Nature studies.*—A study of animals and plants suited to this stage of work. The adopted elementary physiology studies completed. Experiments in physics preparatory to the study of physiography and physics must include those showing the pressure, weight, and behavior of air, sea, and fresh water as agencies, gravity, simple mechanics, effect of heat, nature of sound, light, electricity, etc. Two lessons per week during a nine months' term ought to cover the ground sufficiently thorough in these subjects.

It may be of interest to the reading public to know the normal's method of grading and classification, which is somewhat peculiar. No particular emphasis is placed upon set grades in the school. We recognize that the students, being



conscious of reasonable proficiency, together with the judgment of the instructor in charge, is the best standard of thoroughness. Class work, examinations, and special requirements are the means used to obtain this standard. But to give the students and teachers a criterion for the effort made we have adopted the plan of grades and credits.

Grade.	40 weeks. 30 weeks. 20 weeks. 10 weeks.			
85 to 100.....	10	7½	5	2½
80 to 85.....	9	6½	4½	2½
75 to 80.....	8	6	4	2
70 to 75.....	7	5½	3½	1½
65 to 70.....	6	4½	3	1½
60 to 65.....	5	3½	2½	1½

A pupil's standing from 85 to 100 in a forty weeks' study entitles him to 10 credits for graduation and a study requiring less time a reduction is made accordingly, as shown by the above table. The minimum allowed for the professional course is 168 credits; the academic, 153 credits; the business, 80 credits. A mark below 60 is counted as a failure, and is entitled to no credits. A candidate who has taken all the studies required and still falls below the minimum must raise his grade before he can receive the honors of the school. Professional diplomas require that the recipients make full credits in professional studies and the subject of arithmetic. By prepared work is meant the learning of daily tasks that have been assigned, the keeping of notebooks, etc. By unprepared work is meant the work of the recitation not specially prepared, the oral and written tests, etc.

The normal school made a special effort to make a creditable educational exhibit for the world's fair at St. Louis. How well we succeeded is attested by the many complimentary notices received both by individuals and the press, especially by the educational journals of the country. No doubt but our effort will do much toward dispelling the dense ignorance of some sections of the country regarding our educational facilities. It can no longer be doubted but that New Mexico has schools whose efficiency compares favorably with any of the United States. Every department of the school was represented. Besides books, pamphlets, loose manual training articles, etc., enough cardboards, containing mounted specimens, were prepared to occupy more than 600 square feet of surface. Before shipping the display to St. Louis it was exhibited at normal hall and adjoining rooms and attracted many visitors and served to acquaint the people of our own community with the character of the work being done. The material is to be returned and placed in our museum, making a permanent exhibit for the school.

Upon the whole the school has passed its most successful year. It is true that less names appear upon the roll than last year, this being due to the fact that no preparatory pupils from Silver City were admitted. Had they been admitted, the roll would have exceeded any other year. Not only did every department do better work than usual, but all students, with very few exceptions, were more interested and were better satisfied with themselves and the school. Indeed, progress has been the watchword of the Normal since its foundation in 1893, and the year just closed has not been an exception.

#### NEW MEXICO ASYLUM FOR THE DEAF AND DUMB, AT SANTA FE.

[R. J. Palen, president.]

During the fiscal year ended June 30, 1904, the only work done by this board has been the finishing of the second story and a portion of the basement of the new building, and the putting in of the heating and plumbing apparatus.

Owing to the fact that the revenue assigned for the maintenance of the school is insufficient for its proper management, the board has deemed it best to postpone opening the school till another year, and use all the funds available for the completing and equipping of the building. It is hoped that next year conditions will be such as to admit of the opening of the school for pupils.

## NEW MEXICO SCHOOL FOR ORPHANS, AT BELEN.

[Paul B. Dalies, secretary.]

For the reason that the appropriation for this institution was in the form of a tax levy, the actual construction of the building of the orphans' home was not undertaken at once, because, as you well understand, there is considerable delay in the collection of the taxes. The building of the structure of red brick, containing four large rooms, is completed with the exception of some of the minor details, which will be undertaken when this institution has more money to its credit in the Territorial treasury. Since the appropriation for the building of the home was so small, the institution can not at the present time be utilized for the purpose that it was intended for, namely, a home for the orphans, until further appropriation be made by some future legislature.

We can report to you that the building as it stands at the present time cost approximately \$5,000, and that we will probably receive, when all money is collected from the levy stipulated for this purpose, something in the neighborhood of \$7,000. With an expenditure of \$5,000 for building only, and surroundings still to be improved and minor buildings erected, when comparing these expenditures with the amount of the appropriation, you can readily see that it is a matter of impossibility to entertain the thought of taking in any orphans and to make any endeavor to carry on the institution at the present time as an actual orphan asylum.

I can say further that the building stands on a piece of ground centrally situated. The asylum is located on the corner of two streets, facing south, at a distance of about 5 blocks west from the Santa Fe depot and about 3 blocks east from where all of the business houses of Belen are located.

## PART VI.—TERRITORIAL BOARDS AND INSTITUTIONS.

### CAPITOL CUSTODIAN COMMITTEE.

[A. A. KEEN, *Secretary.*]

The meetings of the capitol custodian committee have been held regularly each month.

The capitol building is in excellent condition; the exterior has been painted and a number of small repairs made in the interior of the building. The various Territorial offices have been supplied with additional furniture.

The halls provided for the council and house of our legislative assembly, while in good condition, are in need of additional furniture besides that temporarily supplied at the completion of the building.

The grounds surrounding the capitol building have been graded, covered with soil, and seeded to blue grass. A large number of elm and maple trees and shrubbery have been planted and are in fair condition, considering the extreme drought that has prevailed during the past year. These will ultimately make the grounds one of the most attractive parks within our Territory. Elm trees have also been planted on the street adjoining the east side of the capitol grounds.

The capitol custodian committee found it imperative to sink a well on the grounds to a distance of about 30 feet, which is cemented to 2 feet above water level and wall to surface laid in lime mortar. The well at present contains from 20 to 22 feet of excellent water and will supply approximately about 4,000 gallons per hour. The well has been connected with the building, also the grounds, thus furnishing sufficient water for use in the building and irrigation of the grounds in case there should be any shortage in the supply of city water.

Three additional fire hydrants have been purchased and placed about 60 feet from the building, one each opposite the north, south, and west entrances, which, together with several hundred feet of fire hose, affords ample protection to the building in case of fire.

The offices and halls of the building as well as the grounds are scrupulously cared for by the superintendent of the building under the direction of your committee.

### TERRITORIAL LIBRARY.

[LAFAYETTE EMMETT, *Librarian.*]

The Territorial library has now become practically a law library, with a collection of almost 7,000 books, derived from sources mentioned in the list hereto appended. This collection is being increased from time to time as means are afforded. Over 300 volumes were added during the past year by purchase, and some 90 by the courtesy



of exchange. The library is now better equipped than ever heretofore and is freely consulted in every district in the Territory. New Mexico has every reason to be proud of its law library.

The number of books in the law library proper, including duplicate copies, is as follows:

Name.	Reports.	Statutes.	Digests.	Total.
Alabama	140	12	3	155
Arizona	3	7		10
Arkansas	68	5	4	77
California	143	18	5	166
Colorado	61	14	1	76
Connecticut	82	14	2	98
Dakota Territory	7	2		9
Delaware	13	17		30
District of Columbia	6			6
Florida	42	3	2	47
Georgia	109	15	2	126
Hawaii	13	1	1	15
Idaho	14	10		24
Illinois	330	11	14	355
Indiana	201	16	5	222
Iowa	126	30	3	159
Kansas	74	30	4	108
Kentucky	85	23	4	112
Louisiana	11	21		32
Maine	121	30	1	152
Maryland	135	26	4	165
Massachusetts	196	61	5	262
Michigan	157	16	6	179
Minnesota	89	6	4	99
Mississippi	76	32	3	111
Missouri	286	25	8	319
Montana	42	7	1	50
Nebraska	66	13	2	81
Nevada	26	13		39
New Hampshire	71	7	2	80
New Jersey	140	17	5	162
New Mexico	20	59	2	81
New York	416	41	11	468
North Carolina	26	13		39
North Dakota	12	7		19
Ohio	90	7	2	99
Oklahoma	12	4		16
Oregon	43	16		59
Pennsylvania	294	14	3	211
Porto Rico		4		4
Rhode Island	23	8	1	32
South Carolina	141	15	3	159
South Dakota	15	8		23
Tennessee	109	8	6	123
Texas	179	15	6	200
Utah	26	8		34
Vermont	63	6		69
Virginia	61	4		65
Washington	30	8		38
West Virginia	47	5		52
Wisconsin	122	8		130
Wyoming	10	1		11
United States	532	38	5	575
Miscellaneous reports				87
Encyclopedias				88
English reports				39
Text-books, etc				222
Grand total				6,479

## NEW MEXICO PENITENTIARY.

[H. O. BURSUM, *Superintendent.*]

During the past year we have had an average of about 230 convicts, all of whom have been kept continuously employed in the manufacture of brick for public use and sale; the construction of a public wagon road, known as the "Scenic route," from Santa Fe to Las

Vegas; quarrying and burning of lime rock for public use and sale; manufacture of clothing and shoes, etc., for penitentiary use; remodeling engine room and installing new machinery; gardening, etc., and various other purposes.

The discipline has been very satisfactory, with the exception of an attempt to make a break by 6 convicts on the morning of February 27th. The men were induced to surrender as escape was impossible, and they were soon behind the prison walls again, all of whom have been severely punished for attempting to escape.

#### SCENIC ROUTE.

In compliance with an act of the last legislative assembly for the construction of a public wagon road, to be known as the "scenic route," from the city limits of Santa Fe, in the county of Santa Fe, to the city limits of Las Vegas, county of San Miguel, and in pursuance thereof, a survey has been made from the city limits of Santa Fe, following through the Santa Fe Canyon to a point about 12 miles from Santa Fe, and from here the switch backs were surveyed over the Dalton Divide and on to the Pecos. On the Las Vegas end a survey has been made and road built from the Hot Springs to Trout Springs, a distance of about 6 miles, continuous road. Of the survey on the Santa Fe end about 7 miles of excellent road has been completed. A great deal of this road has been very heavy, on account of the rock work in constructing the switch backs to get over the Dalton Divide. The maximum grade on all the road built is 5 per cent. So slight is the grade on the switch backs that a vehicle can travel at a good speed, going or coming, over the Dalton Divide.

The scenery along this road is as fine as can be found anywhere. During the years of construction of road an average of 50 men have been employed.

The appropriation made by the legislative assembly, which was \$5,000, was entirely inadequate, and the work on road has been prosecuted for the past four or five months on penitentiary funds. It is expected that the next legislative assembly will justify this expenditure by reimbursing the penitentiary funds, which were used in order that work on the road might be continued, and that a larger appropriation will be made for the continued construction of the scenic route.

The maintenance of prisoners in camp is considerably more expensive than at the penitentiary.

The principle of working prisoners on public roads has been demonstrated to be of a great benefit for the public, in the shape of constructing roads where they are badly needed. The cost is too great to permit their being built by free labor, as it is estimated that the cash value of the road, based on furnishing free labor, would be somewhere in the neighborhood of \$50,000, while the cost to the Territory would not exceed \$10,000, convict labor employed.

The prisoners seem to take an active interest in the work, and the escapes therefrom have not been greater than on any other work. The liberal inducements authorized and provided for by the legislative assembly in granting extra allowance of good time, which operates as a commutation of their sentence for faithful work on

the highway, has no doubt contributed very liberally toward minimizing the tendency of escapes. I believe, therefore, that the legislative assembly acted wisely.

At the Las Vegas end the prosecution of the work has been equally successful, and an elegant road, substantial in every detail, is being built. For this end of the work full credit should be given to Hon. F. H. Pierce, president of the board of penitentiary commissioners, for his untiring and zealous efforts in the prosecution of such work.

All of the members of the board of penitentiary commissioners have taken a keen interest in all of the details of this work, and have assisted very materially in making it possible to successfully carry out of the provision of the legislative assembly for the construction of the scenic route.

*Financial statement from July 1, 1903, to June 30, 1904.*

General maintenance fund:

To amount received from apportionments.....	\$31, 634. 45
By disbursements .....	26, 770. 28
Balance June 30.....	4, 864. 17

Penitentiary salary fund:

To amount received from apportionments.....	15, 204. 68
By disbursements.....	12, 154. 84
Balance June 30.....	3, 049. 84

Convicts' earnings fund:

To amount paid treasurer by H. O. Bursum.....	20, 188. 93
By disbursements.....	19, 748. 92
Balance June 30.....	440. 01

Penitentiary permanent improvement fund:

To amount received from apportionments.....	5, 677. 03
By disbursements.....	5, 664. 70
Balance June 30.....	12. 33

Penitentiary income fund:

To amount received from apportionments.....	426. 08
By disbursements.....	395. 98
Balance June 30.....	30. 10

Penitentiary commissioners' fund:

To amount received from apportionments.....	2, 811. 81
By disbursements.....	2, 171. 10
Balance June 30.....	640. 71

Scenic route fund:

To amount received from apportionments.....	5, 000. 00
By disbursements .....	5, 000. 00

RECAPITULATION.

Received to all funds as follows:

General maintenance fund.....	\$31, 634. 45
Penitentiary salary fund.....	15, 204. 68
Paid treasurer by H. O. Bursum.....	20, 188. 93
Penitentiary permanent improvement fund.....	5, 677. 03
Penitentiary income fund.....	426. 08



## Received to all funds as follows—Continued.

Penitentiary commissioner's fund.....	\$2,811.81
Scenic route fund.....	5,000.00
Total .....	80,942.98

## Disbursed from all funds as follows:

General maintenance fund.....	26,770.28
Penitentiary salary fund.....	12,154.84
Convicts' earnings fund.....	19,748.92
Penitentiary permanent improvement fund.....	5,664.70
Penitentiary income fund.....	395.98
Penitentiary commissioner's fund.....	2,171.10
Scenic route fund.....	5,000.00
Total .....	71,905.82
To balance June 30.....	9,037.16

## NEW MEXICO INSANE ASYLUM.

[WILLIAM R. TIPTON, M. D., *Superintendent.*]

## MOVEMENT OF POPULATION.

The number of patients remaining in the hospital July 1, 1903, was 110—64 men and 46 women. The number admitted during the year was 26—11 men and 15 women. The total number treated for the period was 136—75 men and 61 women. The number of discharges was 23—12 men and 11 women. The number remaining in the hospital July 1, 1904, was 113—63 men and 50 women.

Of those discharged, 7 recovered, 3 men and 4 women; 2 improved, 1 man and 1 woman; 3 were unimproved, 1 man and 2 women; 11 died, 7 men and 4 women.

The percentage of recoveries based on admissions was about 27.

The percentage of deaths based on the total number treated was about 8.

The average daily attendance for the year was about 115.

During the twelve months just passed the general health of the inmates has been very satisfactory. At no time in the history of this institution has there been less acute illness originating in the hospital; this, in a great measure, has been due to the more intelligent care of the drinking water and food.

The average daily attendance was the largest we have ever had.

For the lack of room we have been forced to refuse admission to a large number of applicants. Many of those whom we were unable to receive have been cared for in the county jails—a most deplorable condition of affairs when we consider the wretchedly inadequate quarters and care that can there be given to this class of cases.

From time to time, as patients are discharged from this hospital, their places are often filled by cases taken from filthy, vermin-infested cells, unfit quarters even for those convicted of crime.

In former reports attention has been called to the pitiable condition of this particularly unfortunate class of our population. Our board of directors have fully understood for more than four years the urgent need of more room to meet the demand, and have been untiring in their efforts to solve the problem confronting them, but not until recently have they overcome a part of their difficulties sufficiently to begin the construction of two additional wards.

## IMPROVEMENTS.

Many improvements have been made and others begun during the past twelve months, which will enable us to much better care for the sick.

## ANNEX NO. 2.

Within a few weeks we expect to complete a two-story brick structure, 230 by 48 feet, containing 56 rooms, 2 of which are small dormitories with a capacity of several beds each. On each floor a wide well-lighted and thoroughly ventilated hall extends through the entire length of the building. Ample provisions have been made for bath, toilet, linen, bucket, and broom rooms. When completed, we will have two well-arranged and comfortably equipped wards. Though we are aware that the additional accommodations are insufficient for our needs, we fully expect to care for all the insane now confined in the county jails, as well as a part of those who are being cared for in their homes.

## LAUNDRY.

A new laundry is being installed to replace the inadequate old plant so often complained of in previous reports. The parts now in satisfactory operation are a washer, an extractor, a mangle, all run by steam power furnished by our heating plant; also a full set of porcelain-lined tubs, a drying room, and other minor accessories.

## COLD STORAGE.

With a small expenditure of money a stone outhouse has been converted into a large refrigerator for the storage of meats and other perishable articles of food.

## RETAINING WALL AND CEMENT WALKS.

The old board fence inclosing the yard in front of the administration building has been replaced by a white sandstone wall with red sandstone coping. At the main entrance wide stone steps have been built. Between this wall and the buildings the lawn is being raised by filling in with good soil. This improvement has not only reduced the steep grade which existed before, but has rendered it possible to put in good and serviceable cement walks and to greatly improve the appearance of the hospital grounds.

## PROTECTION FROM FIRE.

A tubular spiral incline fire escape has been built and other precautions have been taken for the better security of the inmates in annex No. 1. Additional provisions are about to be added in the administration building.

## LAND.

The imperative demand for more land has been spoken of several times in our former reports.

To the original 5 acres there have been added various sized pieces

from time to time, which now amount to 153 acres, all located very near the institution.

This small farm produces annually an abundant supply of a large variety of vegetables, a small but constantly increasing amount of good fruit, all of which is used for the patients, besides provender for the milch cows and horses.

In conclusion, will say that too much praise can not be accorded our board of directors for their unstinted work and carefully planned provisions, which have resulted in changing this institution from a place of detention to a nucleus for a well-appointed modern hospital.

#### NEW MEXICO INSTITUTE FOR THE BLIND.

[R. H. PIERCE, *Secretary and Treasurer.*]

First. Through their secretary, the board of trustees entered into correspondence with a majority of institutes for the blind of the United States for the purpose of securing their ideas pertaining to plans for buildings and management of school, thereby endeavoring to eliminate any mistakes which may have been made by these different institutions.

Second. Bids were advertised for to clear building site, donated by Alamogordo Improvement Company, of Alamogordo, N. Mex., of brush and grubs. Contract awarded to lowest bidder and has been completed.

Third. Using various newspapers of the Territory as a medium of advertising, a public call was made for bids for the construction of a two-story brick building with basement. Bids were received and contract awarded to lowest bidder. John Quinliven, of Alamogordo, N. Mex., but to date of this report, said contractor having failed to furnish a satisfactory bond, no work of construction has been done, other than the board of trustees have supplied themselves with, and have on the ground, four cars of brick purchased of the Territorial penitentiary.

The above report is given as the present status of the construction of the aforesaid institute.

#### THE BOARD OF PUBLIC LANDS.

[ALPHEUS A. KEEN, *Commissioner.*]

*Leases of common school lands approved by the honorable Secretary of the Interior for six months ending June 30, 1904.*

County.	Number.	Rental.	County.	Number.	Rental.
Bernalillo.....	1	\$12.80	Quay.....	13	\$218.20
Chaves.....	7	140.80	Roosevelt.....	9	115.20
Colfax.....	3	68.80	San Juan.....	1	12.80
Dona Ana.....	2	25.60	San Miguel.....	4	108.80
Eddy.....	7	112.30	Sierra.....	4	102.40
Grant.....	15	441.60	Socorro.....	11	486.40
Leonard Wood.....	4	51.20	Union.....	6	83.20
Lincoln.....	9	238.40	Valencia.....	11	148.00
Luna.....	2	76.80			
Mora.....	1	12.80			
Otero.....	4	51.20	Total.....	114	2,507.30



*Unimproved leases of common school and institutional lands on file in the Department of the Interior, at Washington, D. C.*

	Num-ber.	Rental.
Common school.....	19	\$678.40
Institutional.....	15	319.96
Total.....	34	998.36

*Applications to lease common school and institutional lands, leases not yet completed by applicants.*

	Applica-tions.	Rental.
Common school.....	6	\$128.00
Institutional.....	1	24.15
Total.....	7	152.15

*Five per cent of the proceeds of the sale of public lands within the Territory by the United States.*

[To be used as a permanent fund, the interest of which only shall be expended for the support of the common schools within the Territory. Section 4, act of Congress approved June 21, 1898. (Stats., 484.)]

January 25, 1904, received from the United States ..... \$5,133.71

*Institutional land sales for the six months ending June 30, 1904.*

Name.	Acreage.	Amount.	Name.	Acreage.	Amount.
Agricultural college.....	2,280.00	\$6,415.00	Deaf and dumb asylum.....	320.00	\$960.00
Normal schools.....	760.00	2,280.00	Miners' hospital.....	1,360.00	3,800.00
School of mines.....	320.00	960.00	Penitentiary.....	960.00	2,880.00
Military institute.....	1,120.00	3,360.00			
Institute for the blind.....	1,449.90	3,789.70	Total.....	8,569.90	24,444.70

*Institutional land leases for the six months ending June 30, 1904.*

Name.	Leases.	Amount.
University.....	1	\$200.00
Military institute.....	1	16.00
Reform school.....	3	87.20
Institute for the blind.....	2	27.20
Deaf and dumb asylum.....	1	19.20
Miners' hospital.....	1	15.60
Penitentiary.....	4	101.60
Total.....	13	466.80

*Payments made for permits for right of pasturage for the six months ending June 30, 1904.*

No.	Name.	Acreage.	County.	Amount.
9	Henry L. Newman, jr.....	21,964.39	Otero.....	\$439.29
10	R. S. Benson.....	42,765.06	Eddy.....	962.70
15	Francis Divers.....	19,993.41	Chaves.....	600.00
16	J. M. Cunningham.....	28,069.00	Socorro.....	1,122.76
17	Frank A. Hubbell.....	5,643.20	do.....	56.43
18	W. H. Jack.....	2,680.75	Colfax.....	65.60
	Total.....	121,115.81		3,246.78

*Territorial selections.*

[United States Land Office fees, account selections of Territorial lands by the United States Land Commission, in accordance with Congressional act June 21, 1898, for six months ending June 30, 1904, as evidenced by receipted vouchers numbered 345 to 402, inclusive, on file, paid through the Territorial auditor's office.]

Purpose.	Acreage.	Amount fees.
Water reservoirs for irrigating purposes .....	134,760.86	\$1,694.00
Improvement of the Rio Grande in New Mexico .....	8,547.17	108.00
Total .....	143,308.03	1,802.00

*Historical building known as "The Palace" in the city of Santa Fe, 1904.*

## RECEIPTS.

D. L. Miller, sale of old material .....	\$3.00
W. H. Fritchman, rent of stable .....	25.00
N. B. Laughlin, seven months' rent .....	91.00
D. M. White, seven months' rent .....	91.00
J. W. Reynolds, seven months' rent .....	140.00
Paul A. F. Walter, postmaster, six months' rent .....	350.00
Total .....	700.00

## DISBURSEMENTS.

Territorial treasurer's receipt (Nos. 40 to 46, inclusive) .....

\$700.00

*Moneys deposited with the Territorial treasurer by the commissioner of public lands for six months ending June 30, 1904.*

[As shown by his official receipts on file, Nos. 40 to 46, inclusive.]

Common school income fund .....	\$5,003.36
University income fund .....	508.84
Agricultural college:	
Income fund .....	844.45
Permanent fund .....	6,415.00
Normal school, Silver City:	
Income fund .....	257.87
Permanent fund .....	1,140.00
Normal school, Las Vegas:	
Income fund .....	257.88
Permanent fund .....	1,140.00
School of mines:	
Income fund .....	367.14
Permanent fund .....	960.00
Military institute:	
Income fund .....	383.33
Permanent fund .....	3,360.00
The Palace income fund .....	700.00
Reform school income fund .....	237.23
Blind asylum:	
Income fund .....	440.73
Permanent fund .....	3,789.70
Deaf and dumb asylum:	
Income fund .....	283.35
Permanent fund .....	960.00
Miners' hospital:	
Income fund .....	429.86
Permanent fund .....	3,800.00
Insane asylum income fund .....	158.89
Water reservoirs for irrigating purposes, income fund .....	1,039.29
Improvement of the Rio Grande, income fund .....	1,179.19
Public buildings at the capital, income fund .....	332.46

Penitentiary:	
Income fund.....	\$446. 03
Permanent fund .....	2, 880. 00
Five per cent proceeds United States Land Office sales within the Territory by the United States, account common school permanent fund .....	5, 133. 71
Total .....	42, 448. 31

## RECAPITULATION.

## RECEIPTS.

Leases of common school lands approved by the honorable Secretary of the Interior.....	\$2, 507. 30
Leases on file in the Interior Department awaiting approval.....	998. 36
Incomplete applications .....	152. 15
Rentals, account Palace Building .....	700. 00
Five per cent proceeds sales public lands within the Territory by the United States .....	5, 133. 71
Sales of institutional lands.....	24, 444. 70
Leases of institutional lands.....	466. 80
Permits for right of pasturage on institutional lands.....	3, 246. 78
Deferred payment notes, account common school lands, series 1903-1906 .....	2, 338. 10
Interest account, deferred payment notes, common school lands.....	81. 16
Additional payments on approved applications, account common school lands .....	76. 80
Deferred payment notes, account leases on institutional lands, series 1903-4 .....	1, 784. 14
Interest on deferred payment notes, account institutional lands.....	1, 668. 82
Total .....	43, 598. 82

## DISBURSEMENTS.

Deposited with Territorial treasurer .....	\$42, 448. 31
Cash in banks.....	1, 150. 51
Total .....	43, 598. 82

## THE COMMISSION OF IRRIGATION.

[ARTHUR SELIGMAN, *Secretary.*]

[Compiled from the records of the commission.]

The reservoir enterprises mentioned in the last report are still pending, and the prospects for carrying them into effect in the near future are exceedingly good. These reservoir enterprises consist of the following:

1. Project of the assigns of A. R. Burkdoll, involving about 100,000 acres of arid land on the Rio Mimbres, in Luna and Grant counties.
2. Project of Ed. Hatton and associates, involving 30,000 acres of arid land in Taos County.
3. Project of J. M. Sandoval, involving 2,000 acres of arid land in Sandoval County.
4. Project of the Four Mile Irrigation Company, involving about 7,000 acres of land in Otero County.
5. Project of the White Mountain Irrigation Company, involving 15,000 acres of land in Otero County.



6. Project of the Jaritas Ditch and Reservoir Company, involving 3,000 acres of arid land in Colfax County.

There are pending before the commission the following reservoir enterprises, but upon which no definite action has been taken: Application of the Abo Land Company, involving 15,000 acres in Valencia and Socorro counties, and C. G. Cruckshank, involving about 27,000 acres in eastern Socorro County.

Pasturage permits on 221,000 acres of land for the term of five years at 4 cents per acre per annum have been recommended by this commission to the honorable the board of public lands for approval and permit. These 221,000 acres have been segregated from the public domain by the United States Land Commission, and the application for such pasturage permits are now pending for approval before the honorable Secretary of the Interior, the applicants for these permits being the following:

Henry L. Newman, jr., Guy Fuller, John S. Taylor, T. J. Atkinson, Francis Divers, W. E. Washington, W. R. McGill, R. A. Morris, J. C. Rhea, J. O. Curtis, and the estate of Lonny Horne, deceased, for 20,000 acres each, and M. W. Mills for 1,000 acres. From these pasturage permits it is expected an income will be derived, as soon as the approval of the honorable Secretary of the Interior is given, and which is looked for any day, this commission will be enabled to employ an expert civil engineer and necessary assistants, thereby complying with the spirit and the letter of the act of the thirty-third legislative assembly, session 1901, in relation to the commission of irrigation.

As soon as these funds shall be available the necessary surveys and procurement of scientific data concerning the character and determination of the land grants made by the Congress of the United States to the Territory of New Mexico for irrigation purposes, and which are under the charge of this commission, will be obtained for the use of this commission and all interested parties.

Applications for the purchase of 8,315 acres of land in the grant made by the United States to the Territory for the purpose of increasing the flow of the Rio Grande have been received at prices ranging from \$2.50 to \$3 per acre, and 7,515 acres thereof have been segregated from the public domain, and upon the approval by the honorable Secretary of the Interior of such segregation, the land mentioned will be sold to the highest bidder for cash after due published notice. With the funds derived, necessary surveys and examinations of the Rio Grande will be made, and it is the intention of this commission to establish pumping stations at suitable locations for the purpose of pumping the underflow and seepage in the valley to the surface for irrigation purposes. This commission believes that scientific explorations to be made and the data already obtained will establish the fact that pumping stations in the Rio Grande Valley will solve the question of an increased water supply for our people for agricultural purposes in a very satisfactory manner, in that section where, judging from scientific explorations and data had so far, suitable reservoir sites will be hard to provide.

There yet remain 136,618.22 acres of the 500,000 acres of land granted by Congress under the act of June 21, 1898, for the establishment of permanent water reservoirs for disposition by this commis-

sion. Of the 100,000 acres granted for the improvement of the Rio Grande and the increase of the surface flow of water therein 21,751.17 still remain at the disposal of the commission.

During the past year more interest than ever has been shown in irrigation enterprises in New Mexico, and it is the opinion of this commission that during the coming fiscal year several of the irrigation projects outlined in another part of this report will be undertaken and active work in the construction of the necessary reservoirs, dams, and ditch systems will commence.

During the past fiscal year there has been one change in the commission, and its personnel on June 30, 1904, was: G. A. Richardson, president; Carl A. Dalies, Frank Springer, Charles E. Miller, Arthur Seligman.

The members of the commission have shown great interest in the work of this body and have attended the several meetings thereof during the past year at the expense of their private business, which, however, they did gladly, believing that they were charged with a very important public duty, which they should carry out to the best of their ability, as irrigation and an increase of the water supply in the Rio Grande Valley are matters of the greatest moment and utmost importance to New Mexico.

#### MINERS' HOSPITAL AT RATON.

[A. G. DAWSON, *Treasurer and Secretary.*]

Received from Territorial auditor-----	\$9,466.62
Bills paid as follows:	
Plans and specifications to I. H. & W. M. Rapp-----	\$1,400.00
Citizens' National Bank, bill for check book-----	16.00
Raton Range, letter heads and envelopes-----	7.00
C. Sandusky & Co., stationery-----	3.75
W. A. Chapman, surveying-----	50.90
Thos. Burns, livery barn-----	5.50
A. G. Dawson, salary from October 12 to January 12--	150.00
Albuquerque Citizen, advertising for bids-----	5.00
Raton Range, advertising for bids-----	5.60
Santa Fe New Mexican, advertising for bids-----	2.50
Las Vegas Publishing Company, advertising for bids--	5.10
A. G. Dawson, salary ending February 12-----	50.00
Citizens' National Bank, express on check book-----	1.00
Morrison Contracting Company, 85 per cent of work in place May 3, 1904-----	1,386.00
A. G. Dawson, salary February 12 to April 12-----	100.00
Morrison Contracting Company, 85 per cent of work in place June 15-----	1,300.00
H. McKee, livery hire-----	1.00
A. G. Dawson, salary to June 12-----	100.00
Morrison Contracting Company, 85 per cent of work in place, to August 2, 1904-----	1,800.00
Colorado Telephone Company, telephone to Rapp Brothers-----	.70
	<hr/> 6,390.05
Balance in treasury August 2, 1904-----	3,076.57

The contract for the building was let to the Morrison Contracting Company for main building, consisting of 28 rooms, for \$13,600. The building is nearing completion.

## TERRITORIAL REFORM SCHOOL AT EL RITO.

[VENCESLAO JARAMILLO, *Secretary.*]

Plans have been adopted for the institution and construction has been begun on the main building, located on a level 20-acre tract at Elrito, Rio Arriba County. The main building will be of concrete and will cost about \$15,000. The execution of the plans adopted will make necessary a total expenditure for buildings eventually of about \$65,000. The institution is to be modern in every respect and is modeled after the most successful institutions of its kind.

## NEW MEXICO BOARD OF HEALTH.

[B. D. BLACK, M. D., *Secretary.*]

At the meeting of the board held December 7, 1903, the following licenses were issued:

Medical licenses issued on registration of diploma .....	25
Deferred and ordered up for examination .....	12
Examined for licenses (passed, 2; failed, 2) .....	4

At the meeting of the board held June 6, 1904, the following licenses were issued:

Medical licenses issued on registration of diploma .....	20
Examined for licenses (passed, 7; failed, 2) .....	9
License refused (unprofessional conduct) .....	1
Rejected for failure to appear for examination .....	8

The following revised list of medical colleges in good standing was adopted:

The Cooper Medical College, San Francisco, Cal.  
 University of California, medical department, San Francisco, Cal.  
 Hahnemann Hospital College, San Francisco, Cal.  
 Yale University, department of medicine, New Haven, Conn.  
 Georgetown University, medical department, Washington, D. C.  
 Columbian University, medical department, Washington, D. C.  
 National University, medical department, Washington, D. C.  
 Bennett College of Eclectic Medicine and Surgery, Chicago, Ill.  
 Chicago Homeopathic College, Chicago, Ill.  
 Hahnemann Medical College, Chicago, Ill.  
 College of Physicians and Surgeons, Chicago, Ill.  
 University of Illinois, medical department, Chicago, Ill.  
 Chicago Medical College, Chicago, Ill.  
 Northwestern University, medical school, Chicago, Ill.  
 Northwestern University, woman's medical school, Chicago, Ill.  
 Rush Medical College, Chicago, Ill.  
 University of Chicago, medical department, Chicago, Ill.  
 Central College of Physicians and Surgeons, Indianapolis, Ind.  
 University of Indianapolis, medical department, Indianapolis, Ind.  
 Medical College of Indiana, Indianapolis, Ind.  
 Hospital College of Medicine, Louisville, Ky.  
 Louisville Medical College, Louisville, Ky.  
 Southwestern Homeopathic Medical College, Louisville, Ky.  
 University of Louisville, medical department, Louisville, Ky.  
 Tulane University, medical department, New Orleans, La.  
 Johns Hopkins Medical School, Baltimore, Md.  
 University of Maryland, school of medicine, Baltimore, Md.  
 Baltimore University, school of medicine, Baltimore, Md.  
 College of Physicians and Surgeons, Baltimore, Md.  
 Baltimore Medical College, Baltimore, Md.  
 Harvard University, medical school, Boston, Mass.  
 Tuft's College, medical school, Boston, Mass.



Boston University, school of medicine, Boston, Mass.  
 Detroit College of Medicine, Detroit, Mich.  
 Michigan College of Medicine and Surgery, Detroit, Mich.  
 University of Michigan, department of medicine and surgery, Ann Arbor, Mich.  
 University of Michigan, homeopathic department of medicine, Ann Arbor, Mich.  
 College of Physicians and Surgeons, Minneapolis, Minn.  
 College of Physicians and Surgeons, Minneapolis, Minn.  
 University of Minnesota, college of medicine and surgery, Minneapolis, Minn.  
 University of Minnesota; college of homeopathic medicine and surgery, Minneapolis, Minn.  
 Homeopathic Medical College of Missouri, St. Louis, Mo.  
 Marion Sims College of Medicine, St. Louis, Mo.  
 Missouri Medical College, St. Louis, Mo.  
 St. Louis Medical College, St. Louis, Mo.  
 Washington University, medical department, St. Louis, Mo.  
 University of New York City, medical department, New York City.  
 College of Physicians and Surgeons, New York City.  
 Columbia University, medical department, New York City.  
 Long Island College Hospital, Brooklyn, N. Y.  
 Buffalo University, medical department, Buffalo, N. Y.  
 Niagara University, medical department, Buffalo, N. Y.  
 New York Medical College and Hospital for Women, New York.  
 New York Homeopathic College and Hospital, New York.  
 Eclectic Medical College of New York, New York.  
 Bellevue Hospital Medical College, New York.  
 Medical College of Western Reserve University, Cleveland, Ohio.  
 Cincinnati College of Medicine and Surgery, Cincinnati, Ohio.  
 Cleveland College of Physicians and Surgeons, Cleveland, Ohio.  
 Cleveland Homeopathic Medical College, Cleveland, Ohio.  
 Medical College of Ohio, Cincinnati, Ohio.  
 Eclectic Medical Institute, Cincinnati, Ohio.  
 Miami Medical College, Cincinnati, Ohio.  
 Pulte Medical College, Cincinnati, Ohio.  
 University of Pennsylvania, medical department, Philadelphia, Pa.  
 Jefferson Medical College, Philadelphia, Pa.  
 Hahnemann Medical College and Hospital, Philadelphia, Pa.  
 Medico-Chirurgical College of Philadelphia, Philadelphia, Pa.  
 Woman's Medical College of Pennsylvania, Philadelphia, Pa.  
 The Western Pennsylvania Medical College, Pittsburgh, Pa.  
 The Milwaukee Medical College, Milwaukee, Wis.  
 Wisconsin College of Physicians and Surgeons, Milwaukee, Wis.

The financial report of the board for the year ending May 31, 1904, is as follows:

#### RECEIPTS.

Fees for licenses:	
Medical -----	\$1, 590. 25
Undertakers -----	175. 00
Total -----	1, 765. 25

#### DISBURSEMENTS.

Remitted treasurer -----	\$1, 605. 45
Fees refunded -----	155. 00
Sundries -----	4. 80
Total -----	1, 765. 25

#### NEW MEXICO BOARD OF PHARMACY.

[A. J. FISCHER, *Secretary*.]

Since last report the board has held two meetings, the first at Albuquerque, October 15 to 18, inclusive, and the last at Las Vegas, March 7 to 9, inclusive.

At the meeting held in Albuquerque there were present B. Ruppe, president; E. G. Murphy, P. Moreno, and A. J. Fischer, secretary. Besides the regular order of business, the secretary was allowed a salary of \$50 per annum; the bill of President Ruppe of \$175, for inspection trip, was allowed and payment thereof approved; the rules were amended disqualifying a person from being granted a temporary certificate as registered pharmacist who fails to make an average of 60 per cent, and the appointment of A. J. Fischer as secretary was approved, the officers to hold over another year.

Five applicants for registration were examined, of whom one was granted registration. Expense accounts of members of the board were presented and allowed, as appears in the financial report, Exhibit B.

At the meeting held in Las Vegas there were present B. Ruppe, president; E. G. Murphy, P. Moreno, and A. J. Fischer, secretary. Three applicants for registration were examined, all of whom were granted registration.

Mr. Benigno Romero appeared before the board and requested that an honorary certificate of registration be granted to his son, M. A. Romero, without examination, which was declined, as Mr. Romero, jr., had shown himself totally unfit for registration.

It was decided to hold the next meeting at Albuquerque at the call of the president. The expense accounts of members were presented and allowed, as shown in financial report. The number of registered pharmacists in good standing is shown as Exhibit A, and financial report as Exhibit B.

EXHIBIT A.—*Registered pharmacists in good standing.*

Registered pharmacists at date of last report.....	112
Registered since last report.....	22
Total .....	134
Failed to renew registration last year.....	14
Registered pharmacists in good standing at this date.....	120
Minor pharmacists.....	11
Total .....	131

EXHIBIT B.—*Financial report.*

Receipts:	
To balance on hand July 10, 1903.....	\$216. 90
Receipts from all sources, July 10, 1903, to July 10, 1904.....	532. 00
	748. 90
Disbursements:	
August 15, 1903, postage.....	\$5. 00
August 15, 1903, cash to President Ruppe .....	175. 00
October 1, 1903, printing postal notices .....	3. 25
October 2, 1903, postage .....	5. 00
October 17, 1903, mileage and per diem :	
B. Ruppe .....	15. 00
P. Moreno .....	28. 40
E. G. Murphy .....	20. 50
A. J. Fischer .....	20. 00
December 31, 1903, salary of secretary for 1903.....	33. 00
January 4, 1904, postage, mailing reports, etc. ....	10. 00
February 10, 1904, salary of secretary for 1904. ....	50. 00

## Disbursements—Continued.

March 9, 1904, mileage and per diem:	
B. Ruppe	\$26. 00
E. G. Murphy	15. 00
P. Moreno	45. 00
A. J. Fischer	20. 00
March 10, 1904, New Mexican Printing Co.	10. 75
April 1, 1904, supplies	8. 35
June 30, 1904, New Mexican Printing Co.	11. 25
June 30, 1904, postage	10. 00
	<hr/> \$511. 50
Balance cash on hand	237. 40

## BOARD OF DENTAL EXAMINERS.

[CHARLES N. LORD, *Secretary.*]

A special meeting of the board was called to order by the president, in his office at Albuquerque, October 13, 1903. Those present were E. L. Hammond, L. H. Chamberlin, and C. N. Lord; absent, F. E. Olney and A. A. Bearup. The meeting was called for the purpose of issuing permanent certificates to 5 graduates of recognized colleges, whose diplomas had been examined by our late secretary, Dr. D. W. Manley. Permanent certificates were also issued to 10 graduates of recognized colleges received since the last regular meeting.

The eleventh annual meeting of the board of dental examiners was held in Las Vegas, June 3 and 4, 1904. Present, L. H. Chamberlin, F. E. Olney, E. L. Hammond, and C. N. Lord; absent, A. A. Bearup, who missed connections at El Paso en route to attend the annual meeting. To 11 graduates of recognized colleges permanent certificates were granted. There were 2 applicants for examination, D. E. Wilson, of Albuquerque, and H. C. Correll, of Roswell. D. E. Wilson passed a satisfactory examination and was granted a permanent certificate. H. C. Correll was granted a temporary certificate, good till next special or regular meeting of the board, when he is to reappear for examination without extra examination fee.

No violation of the law was reported during the past year.

## RECEIPTS.

Received from 22 applicants for registration	\$110. 00
Cash with treasurer	107. 55
Total	<hr/> 217. 55

## EXPENDITURES.

L. H. Chamberlin, traveling expenses	10. 00
C. N. Lord, traveling and postal expenses	34. 45
E. L. Hammond, traveling expenses	25. 60
Chas. A. Meeker, dues to National Association of Dental Examiners	30. 00
L. H. Chamberlin, traveling expenses	32. 55
F. E. Olney, traveling expenses	15. 00
E. L. Hammond, traveling expenses	15. 00
C. N. Lord, traveling expenses	30. 05
New Mexican Printing Company	3. 75
C. N. Lord, engrossing and issuing 13 certificates	13. 00
E. A. Johnston, typewriting annual report	1. 00
Cash with treasurer	7. 15
Total	<hr/> 217. 55



## THE CATTLE SANITARY BOARD.

[WILL C. BARNES, *Secretary.*]

During the past year we have had no troubles with disease among our cattle, and even the mange, or scabies, that has caused so much loss and annoyance in our neighboring States of Texas and Colorado, has made us very little trouble.

In the fall of 1903 the board, owing to the very stringent orders of the Federal Government regarding mange in cattle, decided it would be wise to avail ourselves of the law's authority and engage the services of a veterinarian in order that we might assure ourselves and the Federal Government that everything possible or proper was being done to stamp out this disease and keep our cattle free from it.

To this end the board secured the services of Dr. H. F. Spencer, a young and active veterinarian from California. Doctor Spencer was not only a very thorough and experienced veterinarian, but a practical range-cattle man, who had had years of experience among range cattle in the West. By order of the board he at once made a careful investigation of the conditions prevailing in every part of the Territory among the cattle on the ranges and in the inclosed fields and farms.

He spent several months at the work, being constantly in the saddle, attending round-ups on the ranges, inspecting cattle offered for shipment, and looking through the cattle in the farming districts. To our great surprise and pleasure he was able to assure us that there was very little mange or disease of any kind among the New Mexico cattle. The few cases he found were in shape to be successfully handled, and under his instructions the owners took prompt and careful steps to eradicate the disease.

Dipping plants were established by the cattlemen and cattle dipped under the direction of Doctor Spencer. The result is that the Federal inspectors have not had to turn down a single shipment of New Mexico cattle during the present shipping season, while in our adjoining States it is almost a daily occurrence for some herd to be sent back from the shipping pens to be dipped before they could be shipped.

It is the opinion of well-posted cattlemen that this dipping proposition has come to stay and that in the end it will be accepted as part of the business. Not alone does it cure, or, better still, prevent the mange in cattle, but it frees them from ticks, lice, and other vermin which constantly infest range cattle. The cost is slight, a well-equipped dipping plant costing not more than \$250, and the cost of dipping each animal will not average over  $2\frac{1}{2}$  cents per head. As for the time it takes, giving a good, long dip—say, 75 to 100 feet—about 1,500 head per day can be carefully and successfully dipped by a crew of 6 men. Several neighbors have gone into this business on a community basis, notably at Folsom, in Union County, where the cattlemen got together and raised funds and built a most complete and up-to-date dipping plant. Cattle are brought in to the dip by the hundreds, run through the tanks, and driven home and turned loose again with very little handling or delay.

By this means an absolute guaranty against infection is given to buyers of our cattle and the disease will soon be eradicated. It has

taken a good deal of work, however, to educate the cattle owners up to this point, as the mange is such a peculiar disease that owners were prone to overlook its presence. Cattle will suffer with it all winter, and as soon as green grass comes in the spring and they begin to put on flesh the disease disappears and the owners think they have seen the last of it. With the return of winter, however, it again appears, and then, owing to the cold weather, the dipping is out of the question, and the cattle scratch and rub away all winter long. The disease is not a fatal one, but merely cuts down the animal in flesh, saps its vitality, and makes it an easy prey to the bog hole and the blizzard.

Blackleg prevails to some extent, and always will until cattle owners practice vaccination. It has been greatly lessened these last few years, owing to the general distribution of free vaccine by the Federal Government and a regular campaign of education carried on by this board in posting the cattlemen upon the folly of letting calves and yearlings die of blackleg when so easy a method of preventing it could be had free of all cost. Blackleg, like smallpox, will always prevail to a greater or less extent. It can be controlled and the loss kept to a minimum, exactly as smallpox has been. The trouble is, and it is the case with all such diseases, whether among animals or men, that there will be seasons entirely free from all losses from this source. The cattleman, lulled to a sense of security, becomes careless, neglects to vaccinate, until one day he wakes up to the fact that he has blackleg in his herd. He rushes at once for the vaccine matter, but as it takes some little time to procure it, many animals are lost before it arrives, and the owner curses his luck, and after vaccinating his herd thoroughly, forgets his fears and repeats the same old trick next year.

The man who vaccinates his calves each year, exactly as he renews his fire insurance or pays his taxes, will suffer little from blackleg. This is an age of microbes, bacilli, and infection, and it is hard to make some of the old timers understand that new conditions must be met by new methods.

In our forefathers' days the old-fashioned open well stood in one corner of the lot, the privy vault in the other, and the pigsty between. Yet they were a sturdy, healthy race, possibly had no more typhoid or kindred diseases than we do to-day, but we have done away with the well and the vault. Few people to-day would care to take a drink from the "old oaken bucket" that the poet sang about, lest they become infected with some sort of horrible bacilli or germs.

So the same with cattle; we must use modern methods for combating disease, and, say what you will, vaccination against blackleg is the only sure method to save your calves and yearlings.

During the early part of June a herd of tick-infected cattle from Texas was caught near Portales, in the southeastern part of the Territory. They had come from Fisher County, Tex., a point below the Federal quarantine line, and how they managed to work their way through the Texas ranges, past inspectors, both State and Federal, is at the present time a mystery. The cattle were at once seized and placed in close quarantine and will not be released until there is no possible danger of infection. The owners are being dealt with by the Federal authorities, and, as the penalty for violation of the quarantine is severe, they are bound to pay pretty dearly for their temerity.



The inspection service of the board is in the most satisfactory shape. Personally, I have been connected with the work of the board, here and elsewhere, for fifteen years, and I can say unhesitatingly that I never knew a more careful, efficient body of inspectors anywhere. They are all very bright, intelligent, active young men, eager to do their duty and protect the cattle interests in every possible way, and I take great pleasure in testifying to their worth and value to the cattle interests. For several years the board has maintained inspectors on salary at Kansas City and Denver stock yards, where they carefully inspected every shipment of New Mexico cattle that entered these stock yards. During the past two years, however, owing to the efficiency and care of our home inspectors, these men have found very little to do. So few strays slipped by our local men that we found it wise to discontinue the services at these yards, as it was costing too much for the results accomplished. New Mexico cattle, however, will still be protected, as the board has arranged to have all shippers at both points carefully looked over by competent men, who will be paid so much for every stray they find in a shipment that our local men have overlooked. By this system we believe our cattle will be as carefully looked after as ever and at a great saving in cost to the board.

Early in the present year, in March, Doctor Spencer, owing to ill health in his family, was forced to resign his position, and went back to California. So far we have not replaced him, as owing to the board's representations the Federal Government has taken on itself this part of the work for us, and their able veterinarians, who will hereafter be regularly stationed at several points in the Territory, will be always ready to act for the board in handling any disease among our live stock generally in any portion of the Territory. The board congratulates itself upon this matter, as it gives us the services of at least three first-class veterinarians besides the backing of the General Government in cases of quarantine or other complications that may arise in handling outbreaks of disease.

At the close of June, 1904, Mr. J. A. LaRue, secretary of this board, resigned his position.

Cattle conditions in New Mexico to-day are far from satisfactory. A drought that for length of time and severity is unparalleled in the history of our Territory and the entire Southwest has devastated our stock ranges. Heavy losses have occurred, cattle have been too thin to ship, and the outlook is far from bright. The northern portion of the Territory is in good shape, having had good rains all summer. South of Albuquerque, however, while there have been some rains here and there, no general downpour has been had, and the situation, with only six weeks of grass-growing weather ahead, is indeed critical. Of course we all hope that to-morrow may bring forth the desired rainfall and save further losses. The demand for cattle has been fairly good this season, and had the animals been in shipping shape this would doubtless have been a record-breaking year for shipments. The same conditions, only possibly a little worse, prevail to the west of us in Arizona, where losses have been equally heavy and the situation quite as grave. During the year ending June 30, 1904, the inspectors of this board inspected for shipment out of the Territory 177,062 head of cattle, 12,561 head of horses and mules, and 28,497 hides.



During the same period 8,731 cattle were inspected and admitted into the Territory, coming principally from western and northwestern Texas.

The present members of the board are Col. E. Godwin-Austen, president; M. N. Chaffin, Charles L. Ballard, William H. Greer; Will C. Barnes, secretary.

The inspectors of the board and their stations are as follows: Walter O'Brien, Las Vegas; M. M. McQuaid, Tucumcari; J. V. Latham, Highrolls; Charles L. Ballard, Roswell; Don Johnson, Deming; T. A. Gray, Clayton; E. R. Stewart, Aztec; Wade Brackett, Catskill; A. L. Martinez, Penasco; Louis F. Nohl, Espanola; Joseph M. Ross, Hillsboro; George Huth, Chama; W. J. Hendrix, Cloudercroft; Levi Tabor, Folsom.

#### THE LIVE-STOCK INDUSTRY IN 1904.

It is peculiarly unfortunate that one is called upon to write a report on conditions in the live-stock business of New Mexico just at the present time.

We are in the midst of a drought such as the great Southwest has never before seen or experienced. Conditions never have been as bad, nor could they possibly be much worse.

But as I write we are just entering the period of summer rains here in New Mexico, and there is still hope that the laggard clouds will come to our relief and pour out upon the thirsty land enough water to satisfy us all.

Should this occur, and with almost two months of grass-growing weather ahead of us, we will undoubtedly yet enter the winter with animals fat and grass to carry them through the winter and safely into the next spring.

Going back to the winter of 1903-4, the live stock all through the Territory stood the winter in fine shape. Never in a residence of twenty-five years have I seen such a mild, pleasant winter season. It was too good; too little snow fell and water was scarce.

But generally speaking stock of all kinds went through with a loss lower than ever before in the history of the stock business in New Mexico. I should say that the average loss for the entire Territory was below 1 per cent from all causes.

This favorable condition held good all through the early spring, up to the middle of April. Then the long dry spell began to show, and there was considerable falling off in condition among all classes of stock.

A lack of water was the principal trouble. Creeks began to dry up, springs that never within the history of the country had failed in their flow seemed to weaken, water holes dried up, and prairie lakes that for season after season had been constant in their supply shrank to ponds and finally gave out altogether.

About this time the calf and lamb crop began to put in an appearance, and it was a crop of unusually fine proportions.

There was little or no green grass for the mothers to feed on and the entire crop seemed doomed to total loss.

These conditions held good all over the Territory, with the exception of those counties in the northern portion of the Territory, and especially Colfax and Union.

Here early and copious rains made fine feed, stock fattened rapidly, the increase was all saved, and the stockmen of that section were well satisfied.

To the south of the Las Vegas, however, the dry weather prevailed well into June, when in the Pecos Valley district several very opportune rains fell and filled the water holes, started the green grass, and the worst was over in that vicinity.

West of the Pecos district, however, no rains fell to amount to anything, and, at this writing, while prospects for rain are very good, still none has fallen to any great extent, and losses are bound to be very heavy unless rains fall soon.

In the vicinity of Deming, which is one of the most densely stocked portions of the range country, losses already have been very severe; also up along the Rio Grande Valley in the Socorro and Magdalena districts.

It is unfortunate to be forced to record such a condition of affairs, but inasmuch as there is a point to make in showing up the true conditions as they exist, I have done so, believing that the truth will injure nobody.

#### LACK OF WATER.

To sum up, 75 per cent of the losses that we have had on our ranges are, in my opinion, due entirely to a lack of water.

Given a certain range for either cattle or sheep, let there be plenty of water and a shortage of grass is not so dangerous. But let there be a shortage of the precious fluid, and no matter how much grass you have the stock will surely suffer.

There has been too little development of the water on our public ranges.

The writer knows of miles and miles of grass country in New Mexico where during all this drought not an animal has fed.

Why? Because it was too far from the streams or other water to allow the stock to graze out and back.

It would seem curious to the stranger to our ways that such a state could be and yet no one take advantage of it, for water can be found most anywhere if only it will be looked for properly. In both Grant and Luna counties are vast stretches of well-grassed land that should have furnished grazing for many animals during this period of drought, and yet for want of water it was unused. The reason is because it is simply Government land and open to everyone's use. No one cares to improve it, to erect windmills, dig wells, make dams to catch the flood waters, and then have everybody's stock that cares to come and eat the grass and drink the water that he has so carefully provided.

To the writer's mind there is but one logical solution of the live-stock industry in the Southwest, and that is the leasing to the cattle and sheep men of the vacant public lands.

There was a time here in New Mexico when the proposition was not well received. It was urged that it would result in the extinction of the small owners and give the range over to the great companies. That such a thing is possible or would be allowed I do not believe. Take all of the bills that have been before Congress on this subject, and if anything they erred on the safe side by making the holdings of any one person too small. I think what is known as the "Lacey bill"



provided that no one person should lease more than 6 sections, or between 3,000 and 4,000 acres. This is entirely too small an acreage. No man could possibly make a living upon so small a tract of our average western range land. To be safe they should allow fully 50 acres to a cow and in many districts 100 would be none too little or possibly not enough. I think the law should be elastic enough to permit the Secretary of the Interior to do two things, set the price per acre and fix the amount of land necessary to safely support a cow or a sheep the year round. Then, taking this for a basis, limit the acreage accordingly. Surely we can trust this to the Cabinet officer who would be charged with the duty. He and his officers to-day have far more license in land matters than this would be and you hear no complaints about their action. The Secretary or the Land Commissioner make rulings and decisions every day of the year on questions involving the public lands, its character and class. Why should they not be intrusted to set the rental value per acre of this public land and say how many cattle can be safely grazed upon a section or township? I have said that this was not a popular subject here in New Mexico, and such was the case some time ago, but during the last two years a great change in the sentiment has come about, and I think it a conservative statement that four-fifths of New Mexico cattle owners to-day favor the passage of some such bill as the Lacey bill with a flexible or elastic enough character to allow the land officials to determine the value of the different parcels of land.

In the Lacey law every safeguard was thrown about the matter in the interests of, first, the present range holders, and, second, against its getting into the hands of large owners.

No company or corporation could hold, own, or control a single lease. Every lessee must be a bona fide landowner in the district where he desires to lease. Such a law would wipe out the big cattle companies of New Mexico, but there would come in their place enough small owners and open up enough new ranges now practically untouched to double the present number of cattle in New Mexico; and I make this prediction—that in event of the passage of such a law, within five years New Mexico, which to-day is really overstocked on the ranges, will have fully 50 per cent more cattle than she has to-day. The chief opposition of a lease law has come heretofore from the sheep men, but from careful inquiry among the leading sheep men of this Territory I find a very decided change in opinion among them, and many sheep raisers are strongly in favor of such a law. They admit that, like the cattle, it would end the big herds and holdings, but that in its place would come a multitude of small owners, better sheep would be raised, a better grade of wool clipped, and an improved condition of things all around. A lease law, by encouraging permanent holdings, would tend to add millions to our taxable valuation. Assured of long leases, owners would build comfortable homes and erect windmills and pumping plants, and small plots of otherwise useless land would be cultivated and improved.

To see the benefits of this lease law one has but to go over into Texas and see what has been accomplished there. Ten times the number of cattle are now held by small owners than used to be ranged by the big outfits when it was all free grass. The small owner with a few cattle about him makes provision for them by raising rough



forage, such as cane sorghum and the like. He is raising a better grade of cattle, too, because he is encouraged to buy good bulls when he realizes that he alone will get the benefit of their services.

This land-leasing law must come sooner or later. The rough-and-ready, hit-or-miss style of ranging cattle has got to go, and in its place will be a lease system under which every man will be encouraged to develop the country instead of, as now, to rob it. He will raise rough feed for winters, and above all he will be, by the terms of his lease, prevented from overstocking. This, to me, is the lesson taught by this great drought, and if it hastens the day when we will have some such law—and I am sure it will—then the drought has not been altogether an unmixed evil.

#### DEMAND FOR CATTLE.

The spring opened very badly for cattle sales. The northern buyers kept away, and things looked gloomy, indeed. Later on, however, under the impetus of abundance of feed in the steer-raising districts of the Northwest and the subsidence of the fear of a money stringency, the buyers came down into the Southwest, and steers jumped in value from \$2 to \$3 a head under keen buying. The Pecos district made the biggest shipments, probably 50,000 going from there alone. In the rest of the steer-raising districts the conditions were so bad that round-ups could not be held and little or no shipping could be done. These steers are still on hand, and if conditions improve will doubtless be shipped out late this fall onto the eastern market.

For the same reasons few sheep have been shipped and sheep owners look for heavy shipments later on, as the demand for sheep to feed was never better. Wool has brought a remarkably strong price under spirited bidding from buyers for eastern houses. Probably the average will be close to 15 cents, although I have heard of some few clips selling for 17 cents. During the past five years the grade of sheep in New Mexico has steadily raised, and it is safe to say that there are thousands of sheep in New Mexico that will shear easily 10 pounds of wool each. Ten years ago the average for New Mexico sheep was about  $2\frac{1}{2}$  pounds, two years ago it was about  $4\frac{1}{2}$ , and to-day I should not be surprised if it was not close to 6—truly a marvelous increase and a proof of the correctness of the old axiom that "Blood will tell."

#### LAMB AND CALF CROP.

Generally speaking, both the calf and lamb crop is a failure. Taking the Territory over, I believe it is a conservative estimate to place the lamb crop at about 30 or 35 per cent. In some parts it is more, but in many much less. The calf crop is about that much. In Colfax and Union counties it is close to 85 per cent, but in the southern counties it is almost all lost; hence I doubt if the general average will run much above 30 per cent for the entire Territory.

#### GOATS.

New Mexico still continues to lead in goats. The goat men, too, have had their sorrows to meet. The kids came just when things were driest. Practically they were all lost, but I believe they lost

very few of the older animals. A goat kid from birth to about 6 weeks of age is about the most tender thing to raise that is known to civilization, but after that age you can not kill them by any ordinary course of ill treatment.

#### HORSES.

There has been a steady and profitable demand for range horses all the past season. They have been shipped out by the thousands and have brought very good values, everthing considered.

#### RÉSUMÉ.

Taking everything into consideration, the stock interests of New Mexico have been passing through the "valley of the shadow of death." I believe we are about through it, however, and that from this date things will improve for us all. The old saying, "Hope springs eternal in the human breast," is especially applicable to the western stock raiser. He is a child of hope. You can not discourage him; he lives down all sorts of hard knocks; droughts fail to drive him away; blizzards only make him look for an early spring; and no sooner have the rains come, the grass got green, and his cows fat than he has forgotten all the past and lives only for the future. His business has recuperative power far beyond that of any other legitimate enterprise, and he feels that, with all his losses, a couple of good years will make him even again.

Here's to the stock raiser and his business,  
The very lifeblood of New Mexico.

#### SHEEP SANITARY BOARD.

[SOLOMON LUNA, *President.*]

In accordance with act of Congress passed January, 1903, and an act of the Territorial legislative assembly in March of the same year, the board discontinued the making of inspections for health of sheep for interstate shipment when the same had been inspected by an inspector of the Bureau of Animal Industry, but continued its inspection as to earmarks and brands of all sheep coming into and going out of the Territory, which reports of its inspectors are on file in the office of the board.

These reports show a larger number of sheep to have left the Territory during said period than for a number of years past, the number shipped and driven out being 822,832, while the number brought in was 5,700.

Some two years since they tried the plan of placing in one or two districts salaried inspectors who would devote their entire time and attention to range inspections of sheep and especially to eradicating of the disease of scabies from the flocks of sheep in their districts. This, of course, necessitated the discontinuing of local range inspectors who in many cases were the owners of sheep. The board has found this plan highly successful, and in the districts where salaried inspectors have been employed for two years the disease of scab has been practically eradicated.



Late last summer the board employed additional salaried inspectors and placed them in other districts, in all of which districts a decided improvement was manifested as shown by reports of the inspectors of the Bureau of Animal Industry; in some of the districts not a scabby sheep being offered for shipment while the per cent of scabby sheep presented was much smaller than during the previous year.

This year as soon as the drought is over and general rains prevail, which we trust will be early in July, the board intends to employ a corps of from 7 to 10 salaried range inspectors in addition to local inspectors, who will be continued, in such districts or sections as are so separated from other sheep districts as to make it impossible for these salaried inspectors to advantageously look after the same. These salaried inspectors will be thoroughly competent men who do not own any sheep within the district to which they are assigned and who will carefully and impartially, but vigorously, discharge their duties. They will be instructed to require all scabby sheep immediately placed under quarantine and dipped until clean of scab. Where the owner does not immediately comply with their orders to dip, the inspector will be directed to take charge of such flock and dip them twice, ten days between dippings or until clean of scab.

In this manner the board hopes this winter to show a further and decided improvement in the condition of health of sheep in New Mexico.

Our inspectors last fall and winter had to take charge of and dip a number of flocks in which the owner refused or neglected to comply with instructions and orders of the board, in which cases a fine was imposed.

During this spring and early summer New Mexico has experienced the most severe and general drought that has prevailed in our Territory for many years. The rains, however, are now beginning, and it is hoped that they will soon become general. The losses in sheep have been very heavy, but the greatest loss will be in the lamb crop. The per cent raised will certainly be very small.

#### WORLD'S FAIR COMMISSION.

[W. B. WALTON, *Secretary.*]

Enthusiasm and loyalty to the Territory's interests are the two attributes that have marked the collection of exhibits for New Mexico's part at the Louisiana Purchase Exposition. With funds very much smaller than those of other States and Territories, the people of New Mexico labored untiringly to gather together a display of their resources and of their achievements which should be a credit to the Territory and to the great exposition. That they have succeeded is shown by the many favorable comments in newspapers and magazines, which have done much to correct the erroneous ideas which prevail, especially in the East, regarding existing conditions in the Southwest. With an eye single to the purpose of displaying a "New Mexico of to-day" instead of featuring the Territory as a land of relics and curios—a department which, however, has not been slighted, since the Territory is credited with having the finest ethnological exhibit on the grounds—the board of managers has endeavored to make a creditable display of what has been accomplished with



pick and drill, by irrigation, and a hundred other industries which have sprung up and reached a high degree of development in the last half century. The New Mexico exhibit was designed essentially for the purpose of showing the desirability of the Territory for homes and for investment and to attract people to a section rich in undeveloped resources, which they may help work out to their fullest culmination, and, while so doing, make for themselves and their descendants a home in the everlasting sunshine and the pure, life-giving air of the Rocky Mountain plateau.

#### BOARD OF MANAGERS.

The act of the thirty-fifth legislative assembly creating the Territorial board of the Louisiana Purchase Exposition managers of New Mexico demonstrated the desire of the people of the Territory to have a creditable exhibit at the Louisiana Purchase Exposition at St. Louis in 1904. This act carried an appropriation not to exceed \$30,000, the same to be raised by taxation. Pursuant to the authority contained in the act, Governor Miguel A. Otero, on May 18, 1903, named the following as members of said board: Charles A. Spiess and Eusebio Chacon, of Las Vegas; Fayette A. Jones, of Albuquerque; Arthur Seligman, of Santa Fe; Carl A. Dalies, of Belen; Herbert J. Hagerman, of Roswell, and W. B. Walton, of Silver City. The organization of the board was perfected by the selection of these officers; Charles A. Spiess, president; Carl A. Dalies, vice-president; W. B. Walton, secretary; Arthur Seligman, treasurer.

The board succeeded in collecting an exhibit and making a display in which the members take much pride, feeling that they can safely rest on the verdict as to whether or not they have succeeded in their efforts to the judgment of the people whom they represent. Credit is due to Mr. M. W. Porterfield, manager for the board, who has had personal supervision of the work of collecting, preparing, and installing the exhibit and is in charge of the same.

#### NEW MEXICO'S BUILDING.

New Mexico's building at the World's Fair is one of the most attractive on the Plateau of States, and yet its cost was necessarily moderate, all the expense in connection therewith being considerably less than \$10,000. The mission style of architecture, characteristic of the country, was adopted, and the effect as seen in the completed building is most pleasing. The building is of white staff, one story and a half in height, surrounded by large, roomy verandas, in which are hung, amid palms and ferns, inviting swinging seats made after the mission pattern. It presents a front of 70 feet on the main boulevard and has a depth of 50 feet. The interior consists of the governor's room, commissioners' and superintendent's room, ladies and gentlemen's waiting rooms, and a large reception room, all prettily and tastefully furnished in mission style. In the building are many valuable and interesting relics owned by the residents of the Territory and kindly loaned by them for exhibition. Among these is the coat worn by Aguinaldo when he was captured; in the filigree silver and jewel table belonging to the Woman's Board of Trade

and Library Association of Santa Fe, and other articles rare and ancient, such as the "Maria Josefa," the oldest bell in America, which was cast in 1355, presumably in Spain, and in the sixteenth century, according to tradition, was brought to the present site of Algodones by a Catholic priest. I. H. and W. M. Rapp, of Las Vegas, N. Mex., are the architects of the New Mexico building.

The women of New Mexico have taken an active part in making the exhibit attractive, and to the woman's auxiliary, a board composed of a representative from each of the 24 counties, and of which Mrs. Miguel A. Otero is president, is due the credit for the collection and preparation of a display which is an important feature of the exhibit. It is installed in the New Mexico building and consists of gold and silver plate, costly lace and other fabrics, relics and antiquities with interesting and romantic histories attached, all of which have been contributed by the women of the Territory.

The pictorial display which adorns the walls of the New Mexico building, and is contained in albums for the information of visitors, is the most complete ever sent out by the Territory. The display was prepared under the supervision of Mrs. William Curtiss Bailey, of Las Vegas, manager of the woman's auxiliary board, and illustrates every industry of the Territory, the scenery, the people, the homes, the conditions, and every phase of New Mexico life.

#### EDUCATIONAL EXHIBIT.

New Mexico's educational exhibit may truly be said to be an "eye opener" to the people of the East, "whose hazy ideas about the West," as one writer has aptly put it, receive a strong and wholesome readjustment when they see the actual results of the splendid school work and the photographs of the grand and stately school buildings which demonstrate that New Mexico, in proportion to population, is in no way behind older States in its public school system and far ahead of many in other educational institutions.

The College of Agriculture and Mechanic Arts, the New Mexico Normal School, the Las Vegas Normal School, the University of New Mexico, the Roswell Military Institute, the School of Mines, and a number of denominational schools of a high order all have exhibits which excite the wonder and admiration of eastern educators. The public schools of Albuquerque, Las Vegas, Santa Fe, Roswell, Carlsbad, Silver City, Gallup, Las Cruces, White Oaks, Deming, Alamo-gordo, and other towns and cities are all represented by excellent displays in cutting and folding, raffia, mathematical and English work, geographical work, etc., which show facilities for instruction in the New Mexico public schools to be of the best.

#### MINERAL EXHIBIT.

New Mexico is justly proud of its mineral exhibit. It is undoubtedly the most comprehensive collection that has ever been gotten together in the Territory, showing, as it does, the products of a vastly greater number of mines than it was possible to display eleven years ago when an exhibit was made at Chicago, and it also includes a far greater variety of minerals. A competent authority has charac-



terized the exhibit as containing "perhaps the greatest variety of minerals and mineral products shown by any State or country at the exposition;" certainly a significant statement, and one that calls for the consideration of mining investors the world over.

Here are exhibited, side by side, ores containing precious metals and coal, both anthracite and bituminous, for furnishing power to treat the ores, a combination which must appeal to anyone interested. A 4-ton block of coal, the property of the New Mexico Fuel and Iron Company and obtained from the Hagan coal fields, is on exhibition and is the largest specimen of its kind on the ground, with the single exception of one from Pennsylvania. Iron, zinc, lead, copper, silver, and gold in all their various combinations and mineralogical forms, besides sulphur, mineral paints, mica, asbestos, gypsum, salt, marble, onyx, building stone, and precious stones all come in for their share of attention. Huge cubes of sulphur from the famous Jemez Sulphur Hot Springs; beautifully tinted specimens of copper; a sheet of native copper, the largest in the world, from the ancient Santa Rita copper mines; mineral paints of all kinds; gypsum from that great natural curiosity, the "White Sands," in eastern New Mexico, salt from the extensive salt lakes near the central part of the Territory; marble from the Gila River, and so on in an endless variety could be recounted the various unique and interesting specimens that old Mother Earth has yielded to the indefatigable prospector and miner. Magnificent specimens of gold ore from Pinos Altos, Cooney, and White Oaks excite the admiration or cupidity of many, while silver ores obtained from various parts of the Territory appeal to the eyes of others. There are three fine private collections in this exhibit, embracing almost every known mineral. There are the Laidlaw economic-scientific collection, the Abraham collection, and the Hillsboro collection. A considerable portion of the exhibit was prepared and contributed by the New Mexico School of Mines, located at Socorro. Last, but not least, is the turquoise exhibit, the only one at the Exposition. There are three displays of turquoise, one at the palace of mining and metallurgy, another in the Varied Industries Building, and still another in the "Gulch," or outside mines exhibit, where a turquoise mine has been reproduced.

#### HORTICULTURAL AND AGRICULTURAL.

The products here shown are for the purpose of proving to the world what, under adverse conditions and without Government aid, has been accomplished by the aid of irrigation within the last decade. The superior products of farm, orchard, and field are a revelation to visitors from all lands, and have demonstrated that the very best results and most perfect development in fruit and farm products are obtained by irrigation and sunny skies. The fruits, grain, and vegetables in New Mexico's exhibit have few equals and no superiors. It is the only State or Territory having an exhibition every day of the fair of apples grown this year. A glass jar containing varieties as large as pigeon eggs, picked on April 28, 1904, from a 580-acre orchard near Roswell, was displayed the first day of the fair, and a new shipment has been received every fifteen days to show the early maturity in this country.



There is also a large display of ripe apples which have been in cold storage since last fall. They are in perfect condition, showing up smooth, firm, and in good color. Some weigh a pound each, while pears are shown tipping the scales at 19 ounces.

The agricultural products are varied and extensive—Indian corn, Kaffir corn, broom corn, Milo maize, wheat, oats, rye, barley, sugar cane, and alfalfa.

In the vegetable line, potatoes, beans, turnips, pumpkins and squash, onions, peas, melons, and, in fact, every variety and of fine quality, are shown. These products have reached the highest perfection, being grown by irrigation and receiving the moisture at exactly the time needed.

#### ETHNOLOGICAL EXHIBIT.

The Territory's ethnological exhibit fills an entire room in the Anthropological Building, 32 by 45 feet. From an artistic point of view it can not fail to interest anyone who delights in the beautiful, and that it is superior from a scientific standpoint is proven by the great attention it has attracted among scientists from all parts of the world, who are qualified to judge, and who pronounce it by far the best collection of its kind at the Exposition and one of the best ever gathered together. The Harvey collection is included in the display and is easily a "blue ribboner."

This is but one feature among a number of beautiful and interesting curios which are drawing attention to New Mexico from thousands of lovers of the old, the rare, and artistic.

#### FINANCES.

The report of the treasurer up to and including June 30, 1904, shows the total amount received by the board to be \$21,668.05, of which there has been expended to said date the sum of \$16,868.50, leaving a balance on hand of \$4,799.55.

#### ALBUQUERQUE ARMORY BOARD OF CONTROL.

[T. L. KREBS, *Secretary.*]

Since the last annual report was submitted the quarters of Company G, First Regiment Infantry, National Guard of New Mexico, have been removed to the new armory in the Elks' Opera House.

The new armory rooms, including locker room (drill room), store-room, and toilet room, are on the first floor, a feature strongly to be recommended.

The locker room is supplied with ample individual lockers for officers and men, where accouterments and uniforms may be safely and conveniently kept.

A well-equipped gymnasium, with lockers and shower baths, is maintained in the armory, to which all members of the National Guard stationed in this city have free access.

Strict order is maintained in the armory at all times, no profanity, vulgarity, or other coarseness being permitted.

The expense of this armory, which is considerably in excess of the allowance granted by the Territorial legislature for this purpose, is

defrayed, so far as the excess above the appropriation extends, by the personal efforts and contributions of the commanding officer of Company G, Capt. Bernard Ruppe.

With the additional incentive and friendly rivalry created by the organization of Company E, in old Albuquerque, and with the zeal and energy displayed by Captain Ruppe, there is good prospect in the near future of an armory building in this city devoted primarily to military purposes, a building of which Albuquerque, being headquarters of the First Regiment, National Guard of New Mexico, is much in need.

#### LAS VEGAS ARMORY BOARD OF CONTROL.

[ROBERT H. GROSS, *Secretary.*]

Regular meetings of the board have been held on the second Tuesday of January, April, and July of this year.

The board has the site for the armory selected and still has the option on the property. Nothing further can be done until the fund authorized by the Territory is placed at the board's disposal. They are consequently no receipts or disbursements to report.

## PART VII.—SEMIPUBLIC INSTITUTIONS AND SOCIETIES.

### EDDY COUNTY HOSPITAL AT CARLSBAD.

[Mrs. M. J. KERN, *President.*]

The books of the association show that 35 patients have been taken care of at this hospital during the past year, most of them being charity patients, but some of them have been able to pay something toward the expense of their care. The total amount paid by patients, as is shown by the report of the treasurer which is attached hereto as a part of this report, is \$403. It also appears from the records that the average number of patients at the hospital during the whole year was a little less than 2.

On the 1st of July last year, as appeared from the treasurer's report at that time, and as also appears from his report submitted herewith, the association had a deficit of \$8.02. It has been able to do very much better from a financial standpoint during the year ending June 30, 1904, as the treasurer's report shows that the association now has on hand a balance of \$504.68.

More than \$300 has been expended in permanent improvements on the hospital building. The amount of money received from the appropriation made by the Territory to the support of the hospital has been very satisfactory, and much more than has ever been received during any year in the past. It has also received during the past year more from the patients who have been taken care of than ever before, and the balance of more than \$500 in the treasury at this time is the result of the increased amount received from the two sources above mentioned.

Taking the total expenditures of money during the year and the number of patients cared for, it shows that the expense to the association of caring for each patient during the past year has amounted to about \$2.25 per day, but it must be remembered in this connection that more than \$300 of the amount included in the total disbursements of \$1,511.94 has been expended in permanent improvements on the association's buildings, which, if taken from the expense account, will reduce the cost per patient to about \$1.80 per day.

In conclusion, the directors of the association state that the past year taken altogether has been the most successful and satisfactory year in the history of the association.



*Financial statement from July 1, 1903, to July 1, 1904.*

## RECEIPTS.

1903.		
July	14. Cash from Eddy County -----	\$111. 90
	21. Cash from patient -----	4. 50
	21. Auditor's warrant No. 9455 -----	55. 65
Aug.	3. Cash from Mrs. McDowell -----	3. 00
	15. Auditor's warrant No. 9535 -----	65. 05
Sept.	14. Auditor's warrant No. 9624 -----	72. 95
	14. Cash from Mrs. Cramer -----	11. 00
	14. Cash from Mrs. A. J. Wilson -----	12. 00
Oct.	21. Cash from Ormand -----	7. 50
	22. Cash from Frank Callister -----	15. 00
	21. Cash from Lusiano -----	10. 00
	21. Cash from membership fees, Mrs. Heard and Mrs. Stegman -----	2. 00
Nov.	12. Cash from Callister -----	21. 00
	20. Cash from auditor's warrant -----	127. 75
Dec.	4. From Frank Callister -----	43. 50
	15. Warrant No. 9867 -----	76. 30
1904.		
Jan.	13. Eddy County warrant -----	90. 60
	13. From Mrs. Peter Corn -----	33. 00
	16. From Frank Callister -----	46. 50
	16. From Jacob Isles -----	3. 00
	16. Warrant No. 9981 -----	74. 25
	13. Town of Carlsbad -----	60. 00
Mar.	10. From Mr. Norris -----	25. 00
	10. From Mrs. Peter Corn -----	16. 50
	11. Membership fees -----	46. 00
Apr.	18. Warrant No. 10243 -----	79. 25
	18. Pecos Valley Railway Co -----	40. 00
	18. From patient -----	10. 50
	18. From C. Watson -----	12. 00
	18. From Ulery Furniture Co -----	16. 25
	18. From J. P. McMillan, patient -----	18. 00
	18. From Mr. Powers, patient -----	18. 00
	18. From patient -----	21. 00
	18. From Mr. Callister, patient -----	30. 00
May	6. Warrant No. 10293 -----	175. 30
	28. Warrant No. 10338 -----	351. 33
	28. Eddy County -----	36. 00
	30. Proceeds sale Easter cards -----	18. 00
	30. Proceeds sale Easter cards -----	2. 00
	30. E. McQueen Gray, membership dues -----	1. 00
	30. Mrs. Gray, membership dues -----	1. 00
	30. Miss Tanzell -----	1. 00
June	3. W. L. Bobo, patient -----	42. 00
	14. M. E. Church offering -----	6. 20
	15. Warrant No. 10388 -----	113. 86
Total receipts -----		2, 024. 64

*Recapitulation.*

Received from Territory -----	\$1, 189. 69
Received from patients -----	403. 00
Membership dues -----	51. 00
Donations -----	82. 45
Eddy County -----	238. 50
Town of Carlsbad -----	60. 00
Total -----	2, 024. 64

## DISBURSEMENTS.

July 1, 1903, overdraft at bank as shown by statement of July 1	\$8.02
Warrants paid as follows:	
No. 26. C. H. Klauder	4.00
26. Hess Bros. & Lucas	25.85
27. Eddy Drug Co	12.10
30. Matheson & Little	3.75
35. Mrs. W. P. Johns	40.00
36. Benson Bros	2.30
37. C. H. Klauder	2.00
38. J. E. Lavery	11.35
39. J. O. Wersell	4.95
40. Carlsbad Furniture Co	.45
42. W. A. Kerr	18.40
43. Finlay & Murray	.45
44. Eddy Drug Co	1.35
45. Mrs. W. P. Johns	33.00
46. Hess & Lucas	11.90
48. Mrs. Boyd	42.30
49. Benson Bros	1.90
50. Williams Bros	1.10
51. Williams Bros	2.35
52. J. O. Wersell	6.60
54. J. E. Lavery	18.65
55. Mrs. J. D. Boyd	43.80
56. Finlay & Murray	13.20
57. J. O. Wersell	3.50
59. Williams Bros	2.45
61. Mrs. Boyd	42.45
62. W. A. Kerr	73.95
383. U. S. Meat Market	.80
21. Joyce, Fruit Co	3.70
41. Joyce, Fruit Co	.75
47. Eddy Drug Co	.75
53. C. H. Klauder	6.00
58. Purdy & Lewis	1.00
60. C. H. Klauder	2.00
64. J. O. Wersell	5.25
65. Williams Bros	1.80
66. Eddy Drug Co	1.25
67. Carlsbad Argus	.80
68. Hendricks	.55
69. Matheson & Little	1.25
70. Hess Bros	30.40
71. Mrs. Boyd	40.00
72. Tracy-Roberts	14.60
73. J. O. Wersell	7.00
74. C. H. Klauder	2.00
75. Mrs. Boyd	40.00
76. J. E. Lavery	25.25
77. Tracy-Roberts	9.70
78. J. O. Wersell	5.25
79. W. A. Kerr	29.60
80. Williams & Co	4.50
81. Eddy Drug Co	2.00
82. Mrs. J. D. Boyd	40.00
83. Purdy & Lewis	6.00
84. C. H. Klauder	4.00
85. Purdy & Lewis	31.80
86. Hess Brothers	23.65
87. W. A. Kerr	5.10
88. Ullery Furniture Co	6.50
89. Tracy-Roberts Co	1.35
90. J. O. Wersell	7.00
91. Mrs. Boyd	41.50
92. W. G. Brown	9.00
93. Elliott Hendricks	10.00

## Warrants paid as follows—Continued.

No. 94. McLenathan & Tracy	\$18. 70
95. Mrs. Boyd	45. 00
96. J. E. Lavery	15. 25
97. J. D. Williams	5. 00
98. J. O. Wersell	14. 00
99. A. R. O'Quinn	75. 00
100. W. A. Kerr	32. 60
101. Mrs. J. D. Boyd	40. 00
102. J. O. Wersell	12. 25
104. R. O. Duncan	66. 00
105. Tracy-Roberts Co	32. 93
106. J. R. Linn	36. 15
107. M. S. Groves	149. 55
108. Eddy Drug Co	2. 75
109. A. R. O'Quinn	10. 00
110. Mrs. J. D. Boyd	40. 00
111. R. O. Duncan	35. 50
113. Hess Brothers	3. 35
114. Tracy-Roberts Co	12. 76
115. J. D. Williams	4. 95
116. A. R. O'Quinn	10. 00
116. R. O. Duncan	4. 00

1, 519. 96

*Statement.*

Total receipts	\$2, 024. 64
Total disbursements	1, 519. 96

Balance on hand July 1, 1904	504. 68
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## ST. JOSEPH'S HOSPITAL AT SILVER CITY.

[Sister MARY, *Superintendent.*]

The semiannual statement of receipts and expenditures of St. Joseph's Hospital, Silver City, N. Mex., from December 1, 1903, to June 1, 1904, is as follows:

Patients treated	24
Days treated	661
Patients discharged	18
Still in hospital	4
Patients died	2
Received from Territory for the half year ending June 1, 1904	\$869. 44
Expenditures for the half year ending June 1, 1904	\$869. 44

## EXPENDITURES.

Meat	\$434. 35
Groceries	223. 39
Water	35. 00
Washing	84. 00
Wood	40. 00
Light	45. 35
Drugs	7. 35

Total	869. 44
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## GRANT COUNTY CHARITY HOSPITAL AT SILVER CITY.

[MRS. ANNA L. PECK, *Secretary.*]

The secretaryship of the hospital was filled by Mrs. F. E. Gill during the entire year, but owing to ill health she was relieved by Mrs. Anna L. Peck July 2, 1904.



The following statement shows the receipts and expenditures for the year:

## RECEIPTS.

On hand July 1, 1903.....	\$460. 73
From Territory .....	1, 906. 84
From pay patients .....	2, 270. 45
From other sources .....	40. 10
Total.....	4, 678. 12

## EXPENDITURES.

Food .....	\$1, 575. 30
Drugs .....	114. 25
Fuel .....	67. 72
Laundry .....	195. 70
Matron's fund .....	84. 95
House furnishings .....	403. 15
Telephone .....	39. 00
Insurance .....	60. 00
Salaries .....	1, 341. 50
Balance .....	796. 55
Total.....	4, 678. 12

The number of "pay patients" treated during the year was 137; number of days of treatment, 1,581; number of deaths, 17.

The number of charity patients was 35; days of treatment, 548; deaths, 4.

The hospital building is much in need of repairs, and funds in hand will be needed for the purpose.

In view of the important work of the hospital and its great value to this section of the Territory, it is hoped that by liberal treatment its usefulness may be still further extended and increased.

## LADIES' HOSPITAL AT DEMING.

[KATE E. BYRON, *Secretary.*]

The report of the Ladies' Hospital at Deming follows:

Patients treated.....	43
Patients died.....	2
Patients discharged.....	39
Patients in hospital.....	2

*Financial statement.*

Balance on hand June 30, 1903.....	\$51. 12
Received from Territorial auditor warrant No. 9427 July 31, 1903 .....	\$239. 95
Received from Territorial auditor warrant No. 9777 November 11, 1903.....	476. 03
Received from Territorial auditor warrant No. 10250 April 20, 1904 .....	856. 38
Total amount received.....	1, 572. 36
	1, 623. 48
Paid out from June 30, 1903, to June 30, 1904, as per 62 warrants on treasurer of Ladies' Hospital, numbered from 472 to 533, inclusive, signed by the secretary and president.....	1, 035. 41
Balance on hand June 30, 1904.....	588. 07

*Statement of condition of building fund.*

Amount on hand as per statement of June 30, 1903.....	\$1, 075. 00
Amount contributed during year ended June 30, 1904.....	295. 50
Total in hands of trustee June 30, 1904.....	1, 370. 50

## LADIES' RELIEF SOCIETY OF LAS VEGAS.

[ANNIE GARTMAN, *Secretary.*]

Attention is respectfully invited to the fact that while the Territorial appropriation is of great assistance it does not nearly approach the actual expenses of this institution.

It has cared for a large number of charity patients, who were given medical attention, nursing, comfortable quarters, clothed, and fed. In fact, everything that could be expected in the care of patients has been done.

*Report for year ended June 30, 1904.*

Charity patients in the home June 30, 1903.....	19
Charity patients received during the year.....	89
Charity patients, days treated.....	6, 114
Pay patients received during the year.....	29
Pay patients, days treated.....	739
Patients dismissed.....	96
Patients died.....	17
Patients in the home June 30, 1904.....	24

*Financial statement.*

## Receipts :

June 30, 1903, balance on hand.....	\$92. 08
Territory.....	\$1, 891. 31
Pay patients.....	1, 062. 80
Donations.....	597. 58
Membership dues.....	52. 00
	3, 603. 69
Total receipts.....	3, 695. 77

## Disbursements :

Expended on building.....	\$616. 25
Matron and help fund.....	551. 00
Incidentals.....	165. 00
Expended in care of patients.....	2, 355. 52
	3, 687. 77

June 30, 1904, balance on hand.....	8. 00
July 1, 1904, unpaid bills.....	527. 15

## GALLUP HOSPITAL.

[F. W. MYERS, *Clerk.*]

The following is the report of money received from the Territorial auditor on account of the levy of 0.06 mill, as authorized by section 3 of chapter 108, 1903 acts of the legislative assembly; also the expenditures made by our board, under authority granted to us by the same section of chapter 108, for account of the Gallup Hospital :

## Income :

Warrant No. 9996 from Territorial auditor.....	\$499. 06
Warrant No. 10134 from Territorial auditor.....	323. 30
Warrant No. 10478 from Territorial auditor.....	587. 80
Total.....	1, 410. 16

## Expenditures:

Paid for medical services and medicines-----	\$279. 35
Paid for nurses-----	176. 45
Paid for laundry work-----	10. 75
Paid for meals for patients-----	28. 20
	<u>\$494. 75</u>

Balance cash to credit of fund in county treasurer's hands----- 915. 41

We have been very lucky since getting this appropriation. We have had quite a number of patients, but only one that was in the hospital for any length of time.

We have an option on a piece of property here for \$2,000 which we are contemplating buying for a hospital. We have carefully husbanded the fund with this view in mind and believe we can take care of those that are sick and require hospital care, and at the same time increase the balance in our fund so as to meet the payments for this option. We desire to call to your attention that at this time we have only about half enough money to take up the option.

We should very much like to have this levy increased for, say, two years, then dropped back to the same as at present. This would enable us to purchase and furnish a hospital in good shape. Our people here are very anxious to get the hospital and to have a permanent levy made for its support.

The patients are given good medical attention and nurses and have been directly under the eye of our board.

## ST. JOSEPH SANITARIUM AT ALBUQUERQUE.

[Sister ALEXANDRINE, *Superior.*]

The report of St. Joseph Sanitarium, Albuquerque, from July 1, 1903, to July 1, 1904, follows:

*Financial statement.*

Balance on hand July 1, 1903-----	\$155. 49
Receipts -----	23, 734. 13
Appropriation (Territory) -----	1, 619. 94
Total receipts -----	25, 509. 56
Total expenditures-----	25, 223. 72
Balance July 1, 1904-----	285. 84

The number of patients and the time spent in hospital is shown in the table below:

	Number	Hospital days.
Free patients-----	124	4, 321
Pay patients:		
Ward-----	297	3, 784
Private-----	128	2, 381
Total -----	549	10, 486
Dismissed -----		430
Deaths-----		79
In hospital-----		40
Total -----		549



## ST. VINCENT HOSPITAL AND ORPHANAGE AT SANTA FE.

[Sisters of Charity.]

The Sisters of Charity in charge of the St. Vincent Hospital and Orphanage at Santa Fe submit the following reports:

*St. Vincent Hospital report.*

Patients in hospital June 30, 1903.....	19
Patients received during the year.....	105
Patients dismissed.....	104
Patients died.....	6
Patients in hospital June 30, 1904.....	14

*Financial statement.*

Expenditures .....	\$5, 220. 79
Territorial appropriation.....	3, 308. 41
Donations.....	50. 00
Pay patients.....	87. 00
Accounts payable.....	1, 775. 38

*St. Vincent Orphanage report.*

Children in orphanage June 30, 1903.....	81
Children received during the year.....	24
Children taken out by parents.....	29
Children in orphanage June 30, 1904.....	76

*Financial statement.*

Disbursements .....	\$4, 915. 33
Territorial appropriation.....	4, 940. 12
Friends and relatives .....	127. 65
Cash on hand.....	152. 44

## EL PASO AND NORTHEASTERN RAILWAY HOSPITAL AT ALAMOGORDO.

[GEORGE G. BRYAN, *Chief Surgeon.*]

A tabulated statement of the patients treated at the general hospital, Alamogordo, during the past fiscal year includes a total of 170 cases, of which 147 recovered completely, 17 were discharged improved, 1 discharged unimproved, and 5 died. Among those classed improved were a number of injury cases in which complete functional recovery was impossible. The death rate of 5 in 170 makes a percentage of 2.9, including all classes of cases. Two of these cases were practically moribund at the time of admission to hospital.

Of the causes of the 5 deaths there was 1 case each of acute nephritis, acute lobar pneumonia, septic peritonitis, septic meningitis, and fracture of skull with extensive injury of the brain.

The hospital was extremely fortunate during this time also in losing no cases of typhoid fever and no cases of appendicitis, of each of which there was a number of cases and which diseases usually stand near the heads, respectively, of the medical and surgical causes of death.

## THE NEW MEXICO HISTORICAL SOCIETY.

[W. H. BARTLETT, *Corresponding Secretary.*]

This society is in a flourishing condition and is increasing its collections by the addition of rare and interesting objects as rapidly as its circumstances will permit.

The rooms of the society in the historic old palace are always the center of attraction for tourists and scientists and have been open every day during the past year, both morning and afternoon on week days and during the afternoon of Sundays. During the past year between 3,000 and 4,000 persons have visited the rooms.

In the fall of 1903 we were requested by the commissioners of the Louisiana Purchase Exposition to aid in preparing an exhibit which would be creditable to the Territory and interesting to visitors. We cheerfully acceded to this request, and in company with the commissioners made a selection of objects of antiquarian interest which have formed an important feature in the Territorial exhibit.

The acquisitions during the past year have been unusually important and interesting. Special attention is being given to a collection of industrial articles and implements, such as were in use before the American occupation, and this has received many accessions within the year. Among these may be mentioned a "tina" or rawhide wine press of considerable age, a fine and very large specimen of the spinning wheels of past generations, a hand-made copper still used in the north of the Territory before the American occupation, and an interesting bell of native copper. A number of rare and interesting historical books have been secured, and we are now endeavoring to render some of the more important files of newspapers available for public use by having them bound.

## PART VIII—RAILROADS.

The following statistics are furnished by the railroads doing business in the Territory:

### THE ATCHISON, TOPEKA AND SANTA FE RAILROAD COMPANY.

[H. U. Mudge, general manager.]

#### *Mileage.*

Miles of main track in New Mexico-----	<sup>a</sup> 557.36
Miles of branch lines in New Mexico-----	<sup>b</sup> 112.88
Total -----	670.24

No extension or construction improvements have been made to the property during the last fiscal year.

### PECOS VALLEY AND NORTHEASTERN RAILWAY COMPANY.

[Avery Turner, vice-president and general manager.]

The Pecos Valley and Northeastern Railway Company has 221.47 miles of main line and 12.42 miles of side tracks. There are no branches or subsidiary lines tributary within New Mexico. No new track was constructed during the fiscal year ending June 30, 1904.

The improvements are a new brick depot at Carlsbad, costing \$4,000, and a new depot at Artesia, costing \$2,000.

No new branches or extensions of the railroad are contemplated during the coming fiscal year, and the only improvement under way is a new depot and freight house at Roswell, probable cost \$9,000.

### THE DENVER AND RIO GRANDE RAILROAD COMPANY.

[E. R. Murphy, general auditor.]

The number of miles of this company's lines within the Territory of New Mexico is 189.36, excluding 33 miles of the Rio Grande and Southwestern Railroad not operated by this company. During the latter part of 1903 this company made an arrangement for the construction of the Rio Grande and Southwestern narrow-gauge branch, extending 43 miles southeast of Lumberton, N. Mex., on the narrow-gauge line in southwestern Colorado, of which 33 miles from Lumberton to Elvado were completed and in operation on June 30, 1904, at an estimated cost of \$190,000. This branch will not be turned over to nor operated by our company until it is completed and the expenditure of the builders thereof refunded in full.

In addition to the above a new depot and station building were erected at Servillete, at a cost of \$3,200.

There are no other contemplated improvements or extensions within the Territory of New Mexico at this time.

<sup>a</sup> Includes 3.57 miles of double track; balance is all single track.

<sup>b</sup> Includes Hot Springs branch, 8.09 miles, which is not operated by this company.



**SOUTHERN PACIFIC COMPANY.**

[G. T. Klink, auditor.]

This company operates in New Mexico only the single main line of road, known as the Southern Pacific Railroad, running from the Arizona State line (nearest station in New Mexico, Steins Pass) across the southern portion of New Mexico to the Rio Grande—distance, 167 miles. I am not informed that any improvements or extensions have been made during the last fiscal year or are contemplated. Certain extra work has been done in the vicinity of Strauss, but only in the way of eliminating curves or reducing grades on the line already in operation.

**THE CHICAGO, ROCK ISLAND AND PACIFIC RAILWAY COMPANY.**

[James T. Maher, Chicago, Ill., real estate and tax agent.]

The total mileage of the Chicago, Rock Island and Pacific within New Mexico is 111.5 miles.

There has been no additional track built during the fiscal year ending June 30, 1904.

As to improvements or extensions contemplated, I am unable to give you any definite advice at this time, as the company has not yet passed upon the matter.

**SANTA FE CENTRAL RAILWAY COMPANY.**

[S. B. Grimshaw, general manager.]

During the fiscal year ending June 30, 1904, the Santa Fe Central Railway Company completed on August 7, 1903, their railway extending from Santa Fe to Torrance, N. Mex., a distance of 116.42 miles, and since that time a large and commodious stock yard has been erected at Santa Fe and also a small stock yard at Stanley. In addition to this the railroad yards at Santa Fe have been improved in order to make necessary connections for the handling of narrow-gauge cars. A passenger and freight depot has been erected at Santa Fe, which is used by the Santa Fe Central Railway Company and the Denver and Rio Grande Railroad systems, jointly.

Extensions to El Paso and Albuquerque are under consideration.

**EL PASO AND NORTHEASTERN SYSTEM.**

[W. R. Martin, general manager.]

*Mileage of lines within New Mexico.*

El Paso and Northeastern Railway-----	124.6
El Paso and Rock Island Railway-----	128.2
Total main-line mileage-----	252.8
Dawson Railway-----	131.9
Aomogordo and Sacramento Mountain Railway-----	32.5
Capitan Branch-----	21.0
Jarilla Branch-----	3.2
Total branch-line mileage-----	188.6
Total mileage in New Mexico-----	441.4

No new lines constructed during the fiscal year 1903-4, and none contemplated at present.

**EL PASO AND SOUTHWESTERN RAILROAD COMPANY.**

[H. J. Simmons, general superintendent and traffic manager.]

This company has 163.4 miles of main track in the Territory of New Mexico; also 31.5 miles of branch line, same being from Hermanas to Deming. No new lines were constructed, nor were any improvements of note made during the year just closed.

However, the company purchased 14 new large locomotives, 60 large-capacity steel cars; 3 new baggage, 3 standard coaches, and 2 parlor-dining cars were also purchased and put in service. All of these cars are of the latest design and equal to any running in this country.

#### THE COLORADO AND SOUTHERN RAILWAY COMPANY.

[J. M. Herbert, vice-president and general manager.]

Miles main line on line to Fort Worth-----	83.29
Miles main line on line to Pels-----	5.02
Total main-line mileage in New Mexico-----	88.31

No new trackage was put in for the year ending June 30, 1904, and no improvements are contemplated.

#### THE SANTA FE PACIFIC RAILWAY.

[A. G. WELLS, *General Manager.*]

The improvements made by this company during the fiscal year ending June 30 last, within New Mexico, have been in line of renewals, principally wooden bridges being replaced with permanent steel structures and rail with that of heavier section, in order to put the roadbed in shape to meet the demands of greatly increased traffic. No extension of line has been made within the Territory under the Coast Lines jurisdiction.

The only other improvements worthy of note herein are the expenditures of a considerable amount of capital for new and modern tools and machinery for Albuquerque shops, these being demanded to properly and economically handle the maintenance of the large power assigned to that Territory.

The main-line mileage of the Santa Fe Pacific in New Mexico is 179.3.

The Zuni Mountain Railroad is but 21 miles in length at the present time, although we are making extensions preparatory to our winter's logging operations.

# ADDENDA.

*Official vote for Delegate to Congress, November 8, 1904.*

County.	W. H. Andrews (e p.).	G. P. Money (Dem.).	B. S. Rodey (I. R.).	W. S. Sandoz (S.).
Bernalillo	717	898	1,658	142
Chaves	502	991	34	
Colfax	1,794	945	64	
Donna Ana	983	844	23	
Eddy	199	402	4	
Grant	736	969	63	
Leonard Wood	648	653	18	
Lincoln	644	565	94	
Luna	154	254	71	
McKinley	372	177	74	5
Mora	1,213	1,091	37	
Otero	699	687	28	
Quay	295	350	4	
Rio Arriba	2,014	987	80	
Roosevelt	97	473	12	
Sandoval	1,095	47	9	
San Juan	345	450	40	
San Miguel	2,357	2,065	421	11
Santa Fe	1,110	1,151	359	4
Sierra	379	408	28	
Socorro	1,513	1,060	162	
Taos	1,099	728	60	
Torrance	635	139	21	
Union	894	755	24	
Valencia	1,811	6	31	
Total	22,305	17,125	3,419	162

## *Assessment of 1904.<sup>a</sup>*

County.	Subject to tax, 1904.	Subject to tax, 1903.	Increase.	Decrease.
Bernalillo	\$3,163,800.00	\$2,905,850.00	\$257,950.00	
Chaves	2,861,870.00	2,825,161.00	36,709.00	
Colfax	2,823,187.00	2,841,011.00		\$17,824.00
Donna Ana	2,087,513.00	2,077,699.00	9,814.00	
Eddy	1,749,741.81	1,848,079.00		98,337.19
Grant	2,899,026.00	2,836,377.00	62,649.00	
Luna	1,511,598.00	1,468,691.90	42,906.10	
Lincoln	1,156,655.00	1,268,802.00		112,147.00
McKinley	993,263.00	941,150.00	52,113.00	
Mora	1,014,825.00	1,102,063.00		87,238.00
Otero	1,603,972.00	1,455,425.00	148,547.00	
Quay	577,940.44	725,317.44		147,377.00
Rio Arriba	975,763.00	900,993.00	74,770.00	
Roosevelt	563,900.00	566,953.00		3,053.00
Sierra	1,243,929.00	1,254,791.45		10,862.45
San Miguel	4,432,977.00	4,541,713.00		108,736.00
Santa Fe	1,750,120.00	2,040,517.00		290,397.00
Socorro	1,910,355.00	1,945,010.00		34,655.00
Sandoval	742,279.00	735,455.00	6,824.00	
San Juan	574,881.00	594,506.00		19,625.00
Taos	675,730.34	578,820.00	96,910.34	
Union	1,865,276.00	1,947,250.00		81,974.00
Valencia	1,506,185.94	1,325,247.00	180,938.94	
Leonard Wood	612,452.00	870,070.00		257,618.00
Total	39,297,239.53	39,596,951.79	970,131.38	1,269,843.64

<sup>a</sup>Decreases in several counties caused by creation of new counties.



Class.	1904.	1903.	Loss.	Gain.
Lands:				
Agricultural .....	\$3,953,822.18	\$5,183,918.00	\$1,230,095.82	
Grazing .....	5,669,932.77	5,802,030.75	222,097.98	
City lots .....	6,586,063.75	5,993,009.00		\$593,054.75
Lands:				
Timber .....	325,121.50	125,060.00		200,061.51
Coal .....	402,448.00	60,050.00		341,993.00
Mineral .....	384,808.50			384,808.50
Toll bridges .....	4,325.00	3,600.00		725.00
Telephone and telegraph .....	138,462.00	75,080.35		63,381.65
Ditches for manufacturing .....	7,500.00	17,318.00	9,818.00	
Ditches for irrigation .....	2,720.00			2,720.00
Reservoirs .....	19,800.00	11,320.00		8,480.00
Mines:				
Surface .....	150,665.00	539,369.00	388,704.00	
Product .....	55,500.00	58,427.00	2,927.00	
Railroads:				
Standard gauge .....	7,874,829.96	6,857,014.20		1,017,815.76
Narrow gauge .....	636,708.00	625,210.00		11,498.00
Mills .....	149,371.00	205,797.00	56,426.00	
Notes and accounts .....	147,554.00	214,352.00	66,798.00	
Engines .....	119,153.00	190,929.00	71,776.00	
Reduction works .....	37,245.00			37,245.00
Horses .....	977,919.50	903,034.50		74,885.00
Mules .....	81,764.00	102,627.00	20,863.00	
Cattle .....	5,870,824.50	6,432,955.00	562,130.50	
Sheep .....	2,524,405.25	2,727,977.50	203,572.25	
Goats .....	179,239.00	194,442.00	15,203.00	
Swine .....	19,642.00	16,187.00		3,455.00
Burros .....	9,082.50	8,785.00		
Carriages and wagons .....	314,553.50	317,607.00	3,053.50	
Sewing machines .....	61,237.50	58,089.00		3,148.50
Saddles and harness .....	113,474.50	115,694.00	2,219.50	
Merchandise .....	2,060,368.00	2,032,025.00		28,343.00
Capital in manufacturing .....	16,315.00	13,067.00		3,248.00
Implements, farm .....	92,410.25	88,125.25		4,285.00
Fixtures, office and saloon .....	125,782.00	124,161.00		1,621.00
Money .....	88,342.57	236,204.97	147,862.40	
Bonds .....	5,655.00	15,656.00	10,001.00	
Watches and clocks .....	25,356.00	27,388.00	2,032.00	
Books .....	34,687.00	37,693.00	3,006.00	
Jewelry .....	25,091.00	21,578.00		3,513.00
Gold and silver plate .....	3,974.00	5,613.00	1,639.00	
Instruments, musical .....	94,259.00	87,586.50		6,672.50
Household goods .....	617,155.00	616,981.00		174.00
Banks .....	885,370.80	503,384.00		381,986.80
Wheat .....	439.00	194.00		245.00
Oats .....	215.00			215.00
Barley and corn .....	28.00	2,526.00	2,498.00	
Hay .....	3,176.00	5,381.00	2,205.00	
Lumber .....	88,313.00	83,117.00		5,196.00
Coal .....	1,387.00	166.00		1,221.00
Tools .....	32,692.50	45,552.00	12,859.50	
Other property .....	711,158.50	954,733.77	243,575.27	
Bees .....	5,574.00	1,547.00		4,027.00
Loss by increased exemptions .....			202,666.00	
Total .....	41,735,520.53	41,832,566.79	3,484,028.72	3,184,316.46
Exemptions .....	2,438,281.00	2,235,615.00		
Subject to taxation .....	39,297,239.50	39,596,951.79	3,184,316.46	

## LINCOLN FOREST RESERVE.

[CLEMENT HIGHTOWER, *Supervisor.*]

In southern New Mexico, between the Rio Grande del Norte and the Rio Pecos, is an elevated region 140 miles wide, from the center of which rises an irregular mass of mountains. Their summits and higher slopes are covered with timber, and their lower declivities and spurs support a scattering woodland. This range of mountains is known in different localities by the several names of Sacramento Mountains, Sierra Blanca or White Mountains, Capitan Mountains, and Jicarilla Mountains. In the Sacramento Mountains little of the land is owned by the Government. The southern portion of the Sierra Blanca Mountains is included within the present boundaries

of the Mescalero Apache Indian Reservation. Those remaining portions of these mountainous areas which are timbered or wooded, or which form important parts of watersheds, are included in or are adjacent to the Lincoln Forest Reserve, created by proclamation of the President on July 26, 1902. A description of the forest conditions in this reserve is given in a recent publication of the United States Geological Survey, which is scheduled as Professional Paper No. 33.

The general elevation of the region adjacent to the mountain ranges is 5,000 feet above the sea. Upon the higher slopes of the mountains are numerous small, perpetual streams, varying in length according to the protection afforded by forest or woodland. Some of these unite to form "rivers," a term here applied to such of the water courses as can advance a few miles desertward. The El Paso and Northeastern Railway runs near the western boundary of the reserve. Wagon roads traverse the flats, plains, and mesas, and the mountainous regions are accessible by numerous trails. The forests are open and are often scattered with light underbrush—a type common to the mountains of the Southwest. Since better lumber can be imported to the markets that border this region than can be obtained here, and since good water is the scarcest of commodities, these forests have their greatest value as water conservers.

Three well-defined forest zones are noted in this reserve. The sub-alpine zone is found between altitudes of 9,000 and 11,000 feet. The principal tree is Englemann spruce, but considerable white fir, red fir, Mexican white pine, and aspen are also found in this zone, generally growing in groves. The yellow pine zone ranges from 6,400 to 9,000 feet above sea level. Yellow pine, supported by red fir, white fir, Mexican white pine, and oak, plays the principal part in the forests of this zone. Along the streams and canyons are locust, maple, cottonwood, and other deciduous species overlapping from the woodland zone. The woodland zone occurs between altitudes of 5,000 to 6,400 feet. The species of trees composing it are piñon, juniper, cedar, scrub oak, ash, box elder, and walnut.

The total burning area is estimated at 1,480 acres, or less than 1 per cent of the entire timbered area examined. Very small burns are nevertheless numerous, and considerable areas have been overrun by fires that destroyed many trees. Since the establishment of the forest reserve most of these small fires have ceased. This cessation of forest fires is due partly to the vigorous patrol which has been maintained and partly to the changed sentiment of the people, who are now fully alive to the benefits of forest protection.

The area examined covers portions of eight mining districts—White Oaks, Vera Cruz, Nogal, White Mountain, Rio Tularosa, Tularosa, Capitan, and Bonito. The region has been well prospected for gold, silver, and copper, which have been discovered in paying quantities. Measures of bituminous coal are found in the vicinity of Capitan and also near White Oaks.

#### THE BUREAU OF IMMIGRATION.

[MAX FROST, *Secretary.*]

There has been no change in the membership of the bureau since my last report, and this has consisted for the past year of the following: W. B. Bunker, Las Vegas, president; Granville Pendleton, Aztec,

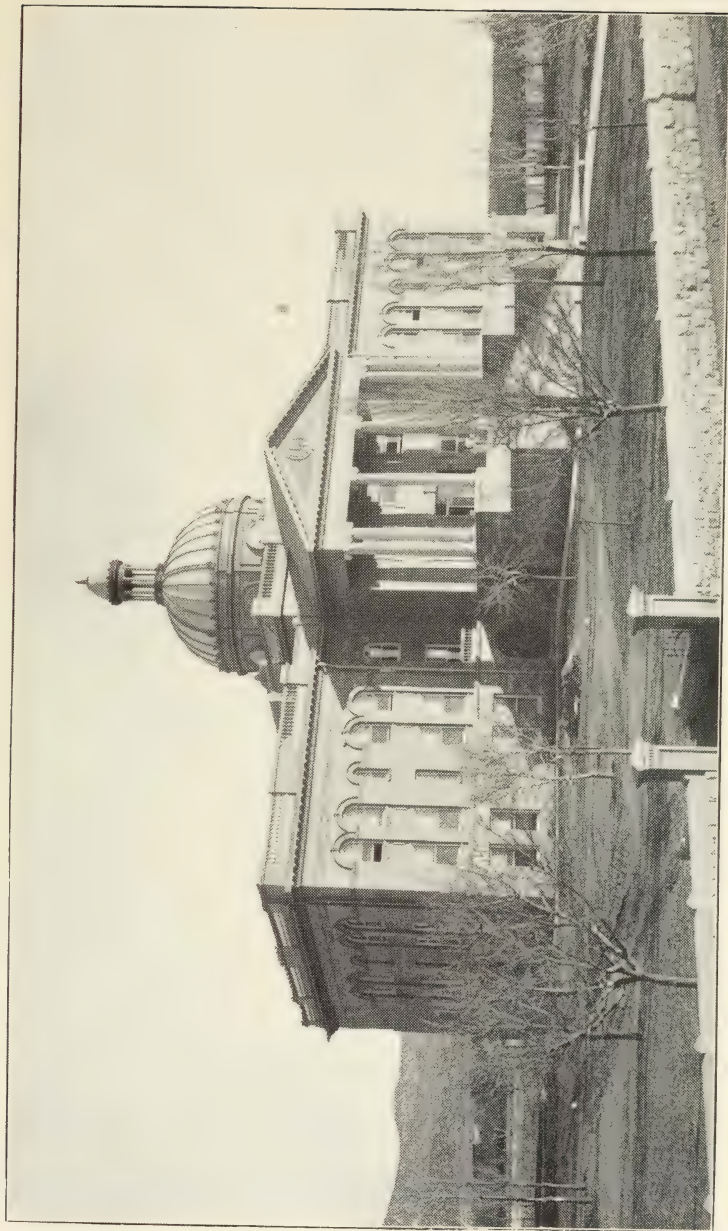
vice-president; Joseph W. Bible, Hanover, treasurer; Alfred Grunsfeld, Albuquerque, and J. E. Torres, Socorro, members; Max Frost, Santa Fe, secretary. The bureau is nonpartisan, consisting of 3 Republicans and 2 Democrats.

The business of the bureau is constantly increasing, and the number of letters received and answered during the fiscal year ending June 30, 1904, has increased nearly 25 per cent over the preceding year. These applications for information have come from every State and Territory in the Union, from far-off Alaska, as well as from the southern counties of Texas; from Vermont and Maine, as well as from southern California; from foreign countries, such having been received from England, Scotland, Ireland, Germany, Sweden and Norway, Russia, Denmark, Italy, Greece, Spain, France, Syria, and the Cape Colony. Prompt and effective attention is paid to each communication and each inquiry is answered as fully as circumstances and the knowledge possessed by this bureau will permit. In addition to these answered inquiries, reports of the governor of New Mexico to the Secretary of the Interior for the year 1903, illustrated bulletins, descriptive of the resources, climate, minerals, and conditions and industries of each county, and Territorial newspapers have been sent to applicants; 1,000 maps of New Mexico, purchased by the bureau from the General Land Office at a cost of \$120, have also been sent out to those desiring information concerning the Territory. That the dissemination and distribution of this literature and maps has done great good is clearly proven by the many letters acknowledging receipt thereof and giving thanks for receiving same received at this office, and by the fact that many persons have come to the Territory during the last twelve months to make it their permanent home. Considerable of an influx has been noticed in the farming population, as well as in the town; in fact, the distribution of this new population has been pretty evenly divided between town and country.

During the year there have been distributed by the Bureau 1,000 copies of the report of the governor of New Mexico to the Secretary of the Interior for the year 1903; thousands of illustrated bulletins of a convenient size to slip into a letter envelope, descriptive of the several counties of the Territory. About 60,000 of these bulletins were sent to the New Mexico Building at the Louisiana Purchase Exposition for distribution and to be given to visitors. The superintendent of New Mexico exhibits reports that this literature was very welcome and was eagerly sought after and taken by the thousands of visitors who were at the building during the exposition during the months of May and June of this year. The superintendent also states that during the remaining months of the exposition, five in number, he believes the supply of bulletins furnished will be fully exhausted.

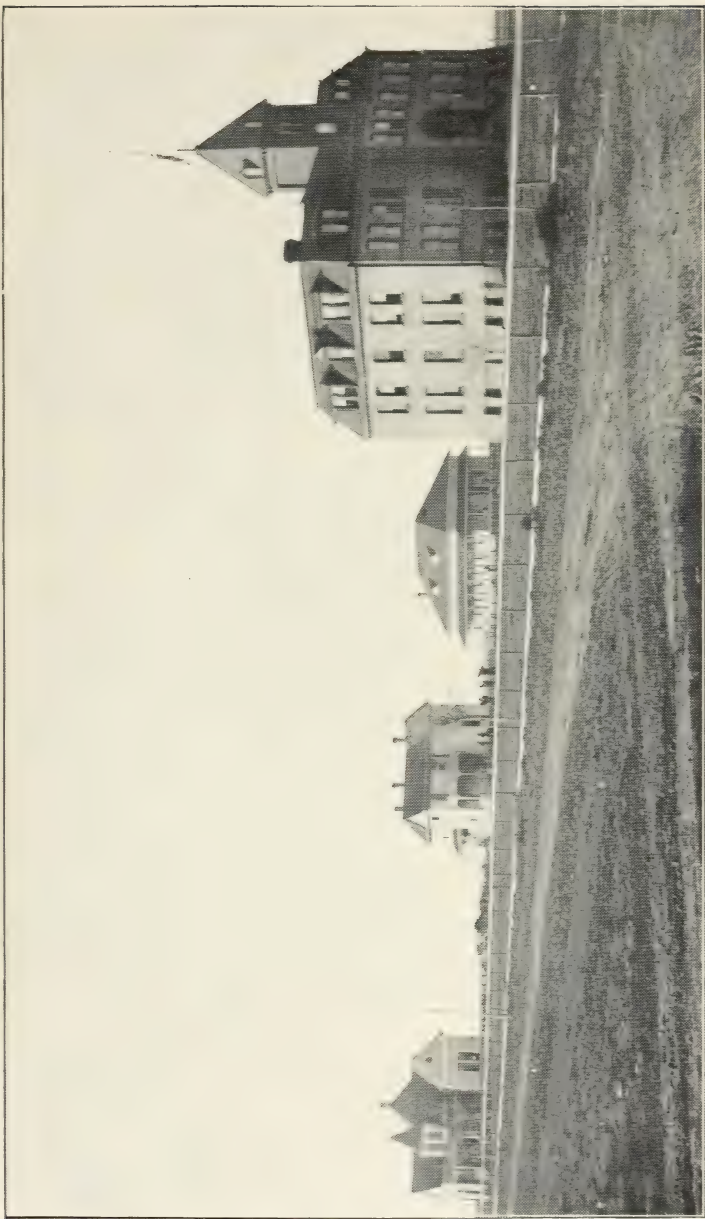
This report is made thus brief in accordance with your instructions. No details are given, because the space for the report has been circumscribed. The above, however, is a correct synopsis of the work done by the Bureau during the year for which the report is made.





THE CAPITOL OF NEW MEXICO AT SANTA FE.

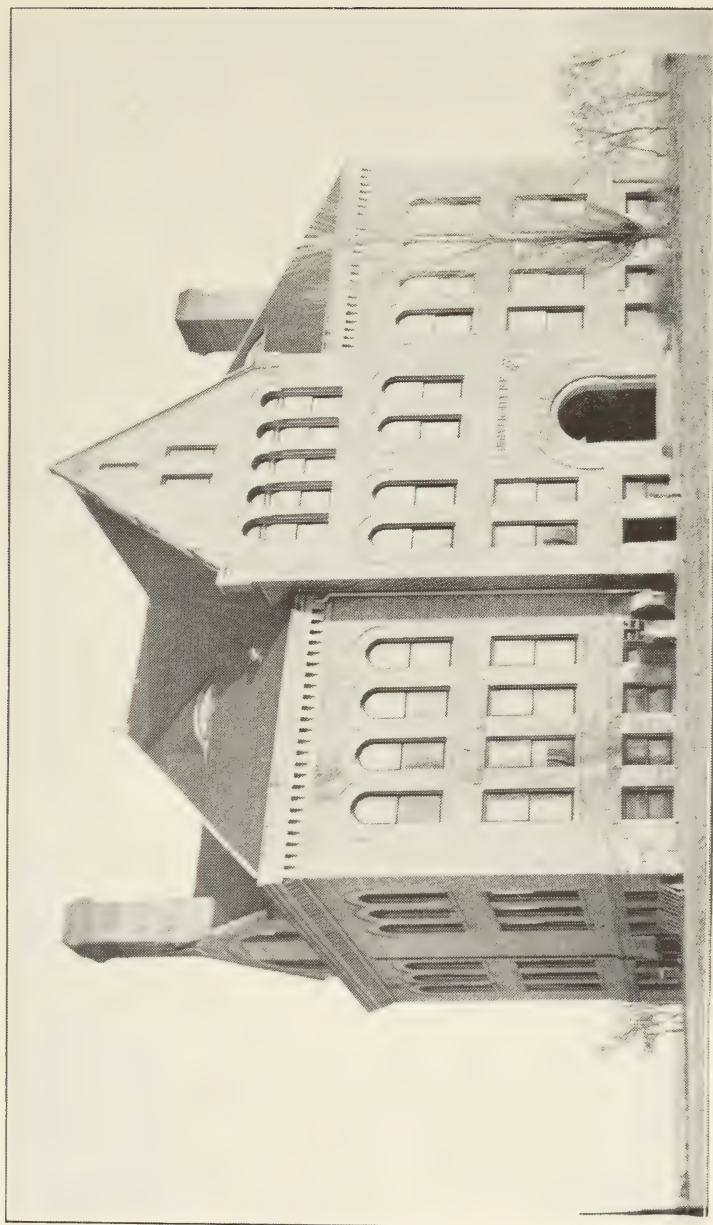




MILITARY INSTITUTE AT ROSWELL.



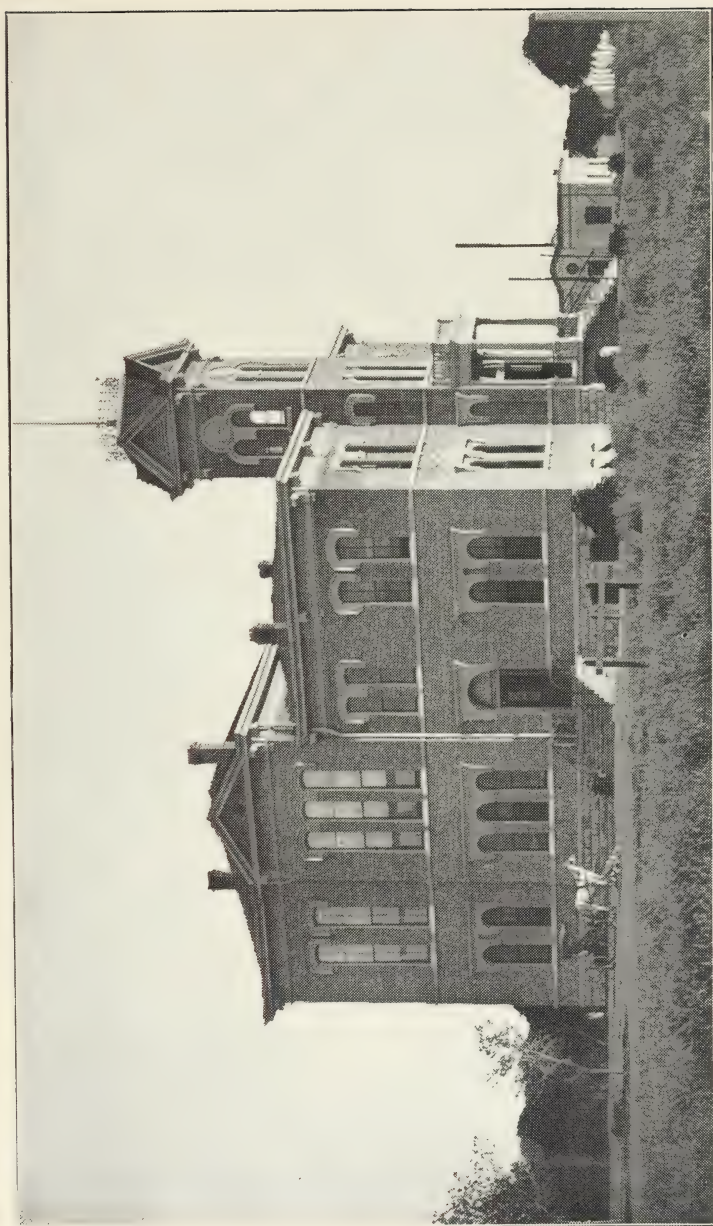




UNIVERSITY OF NEW MEXICO AT ALBUQUERQUE.

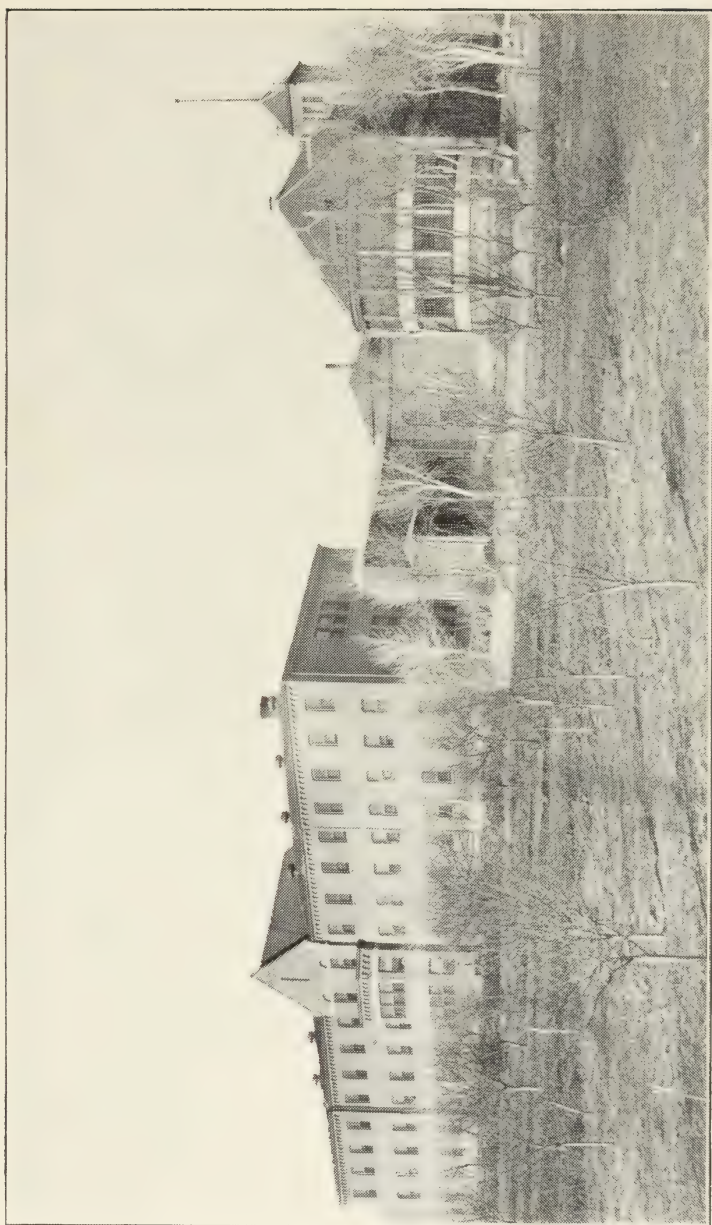






MAIN BUILDING OF THE COLLEGE OF AGRICULTURE AND MECHANIC ARTS AT MESILLA PARK.





NEW MEXICO INSANE ASYLUM AT LAS VEGAS.



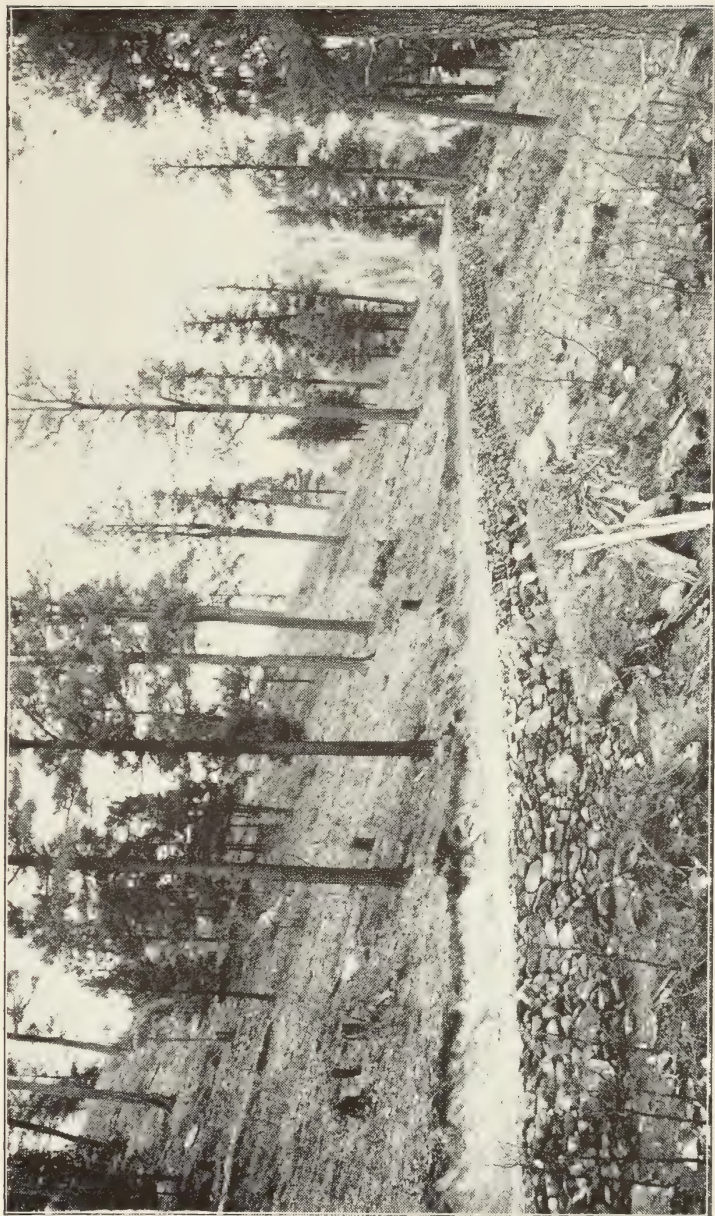




NORMAL UNIVERSITY AT LAS VEGAS.

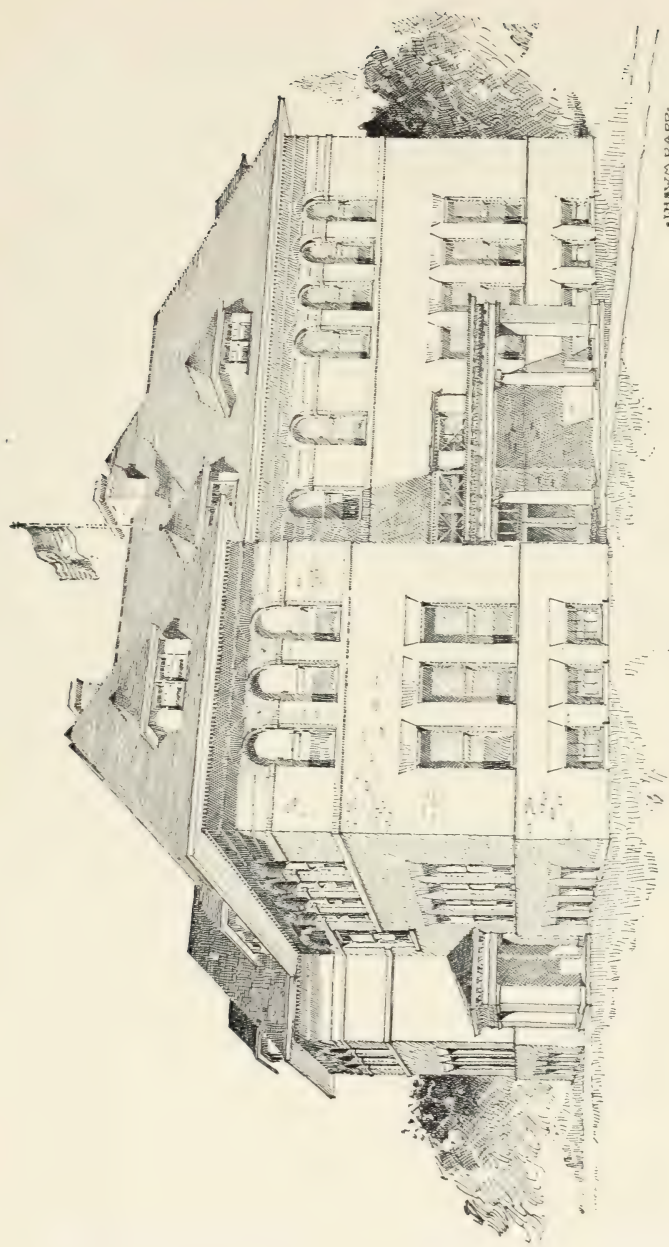






SCENIC ROUTE ROAD BETWEEN SANTA FE AND LAS VEGAS.



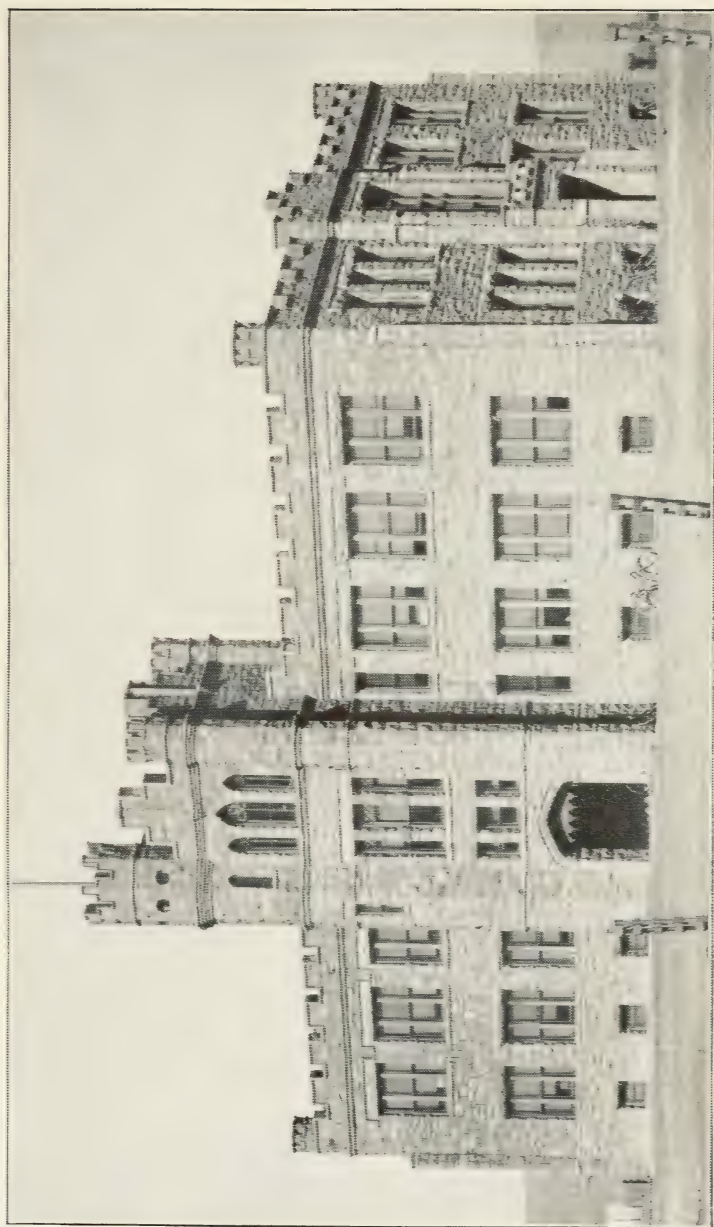


• JAMES H. HARRIS •  
• ARCHITECT •

NEW PUBLIC SCHOOL AT SANTA FE.



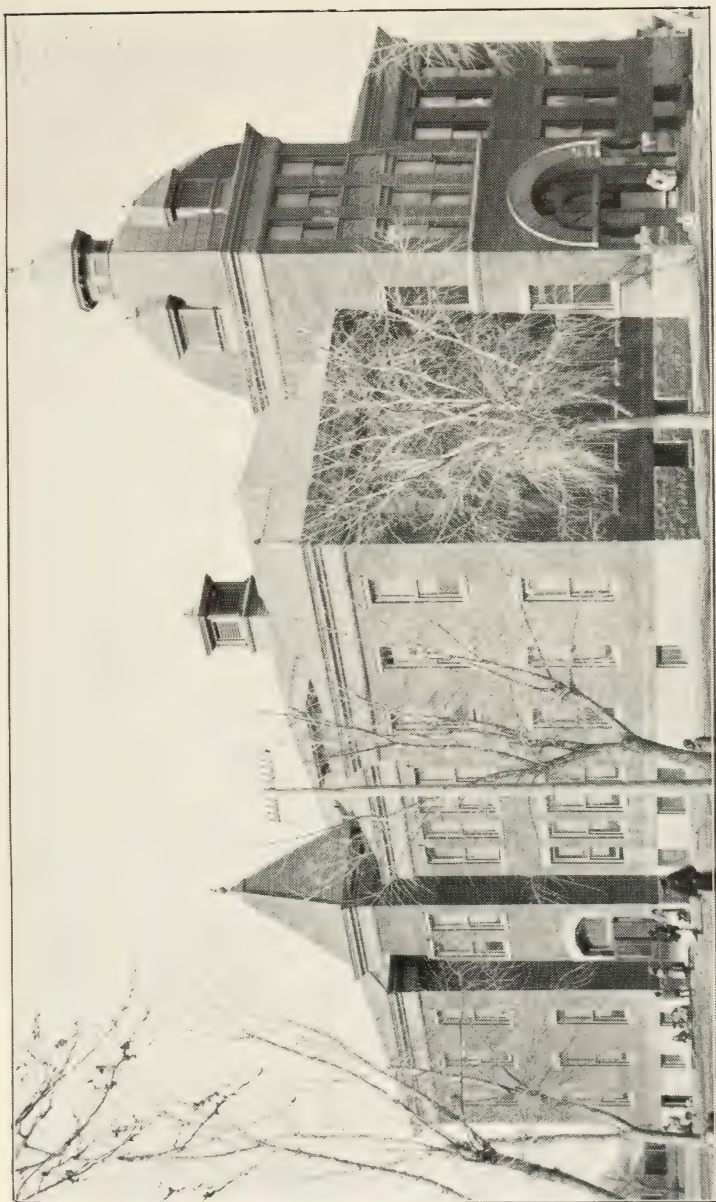




PUBLIC SCHOOL AT LAS VEGAS.

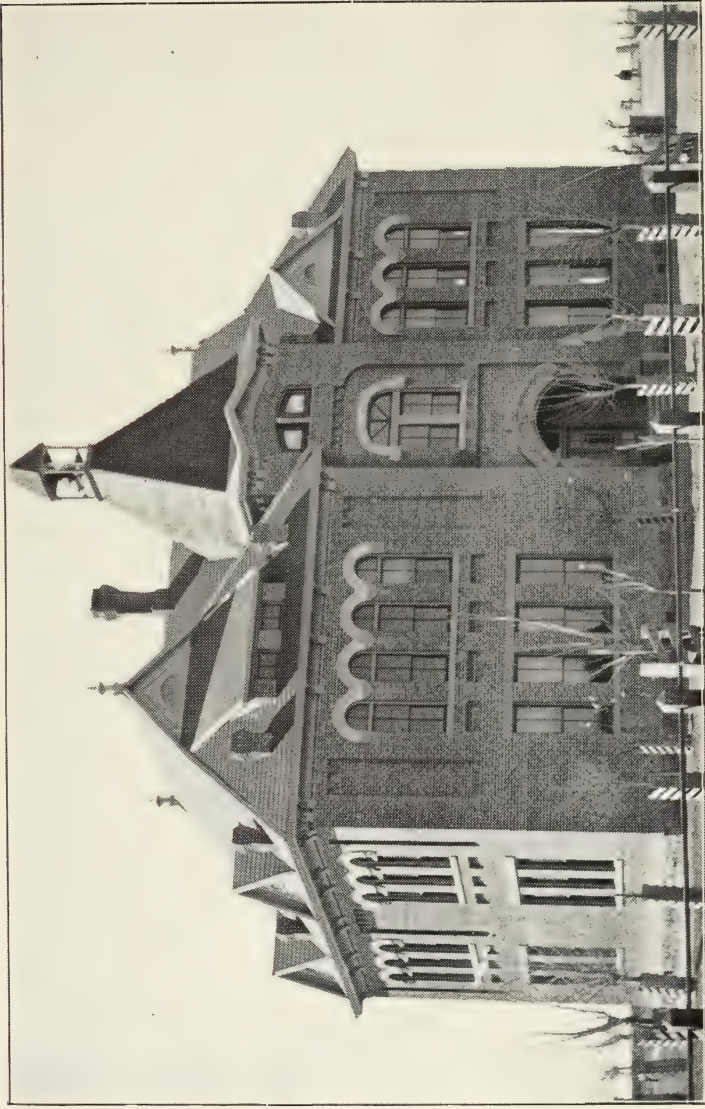






PUBLIC SCHOOL AT ROSWELL.

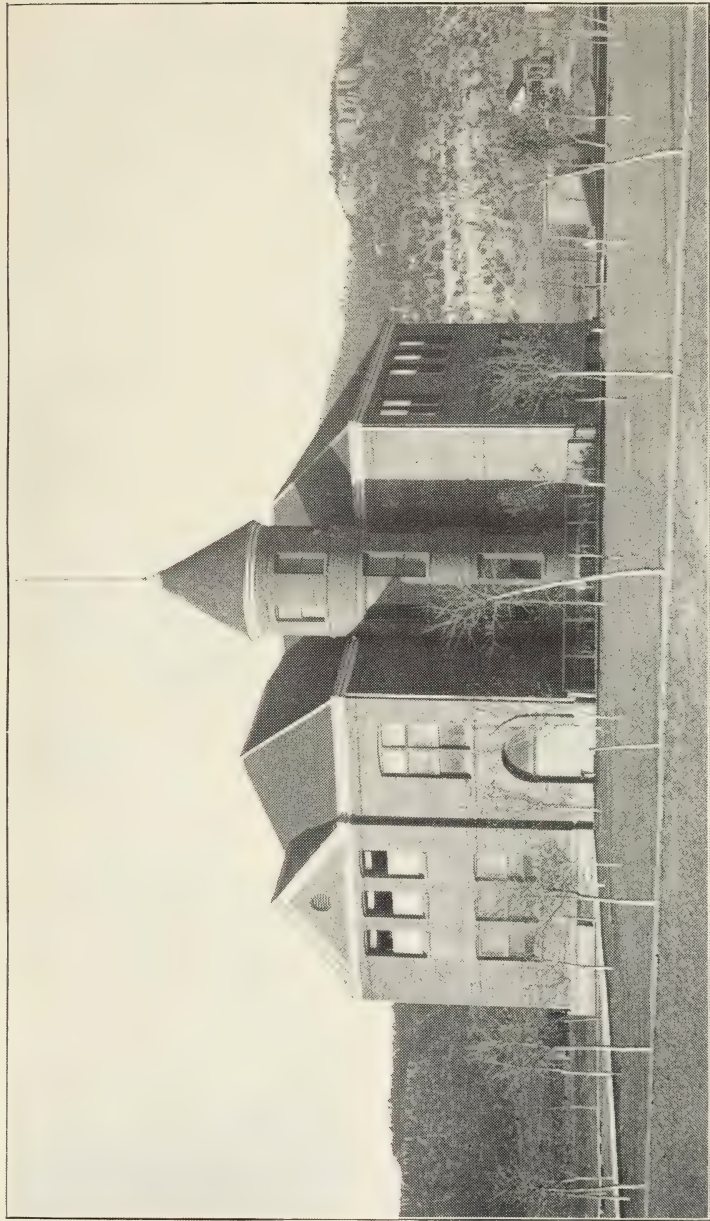




PUBLIC SCHOOL AT DEMING.



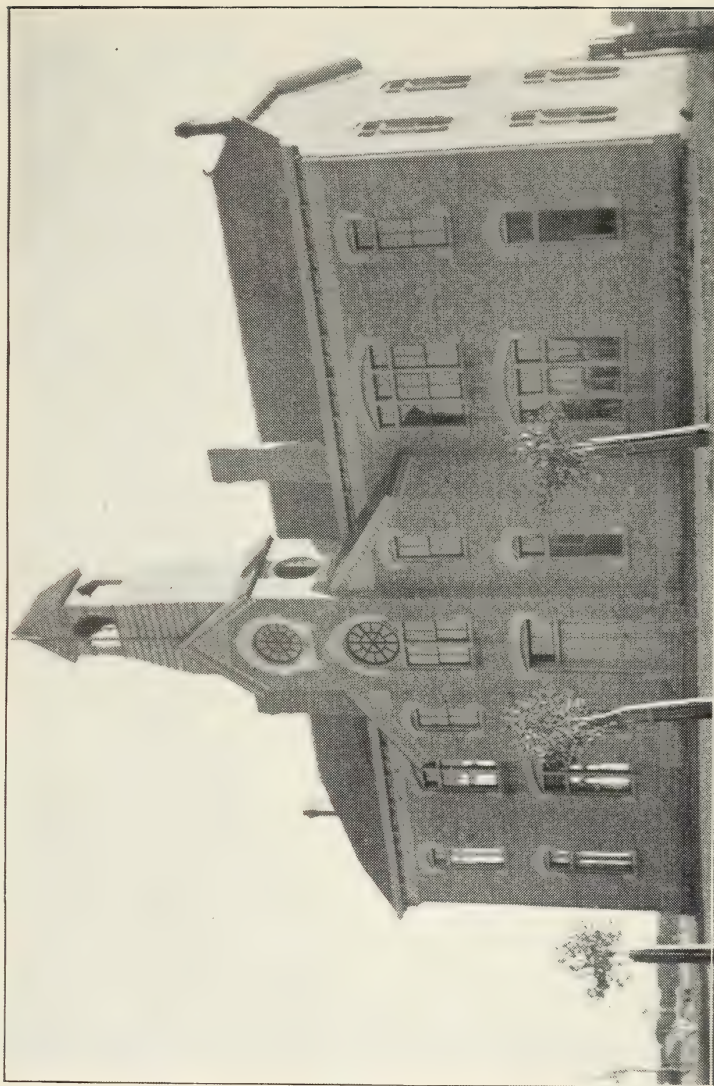




PUBLIC SCHOOL AT RATON.

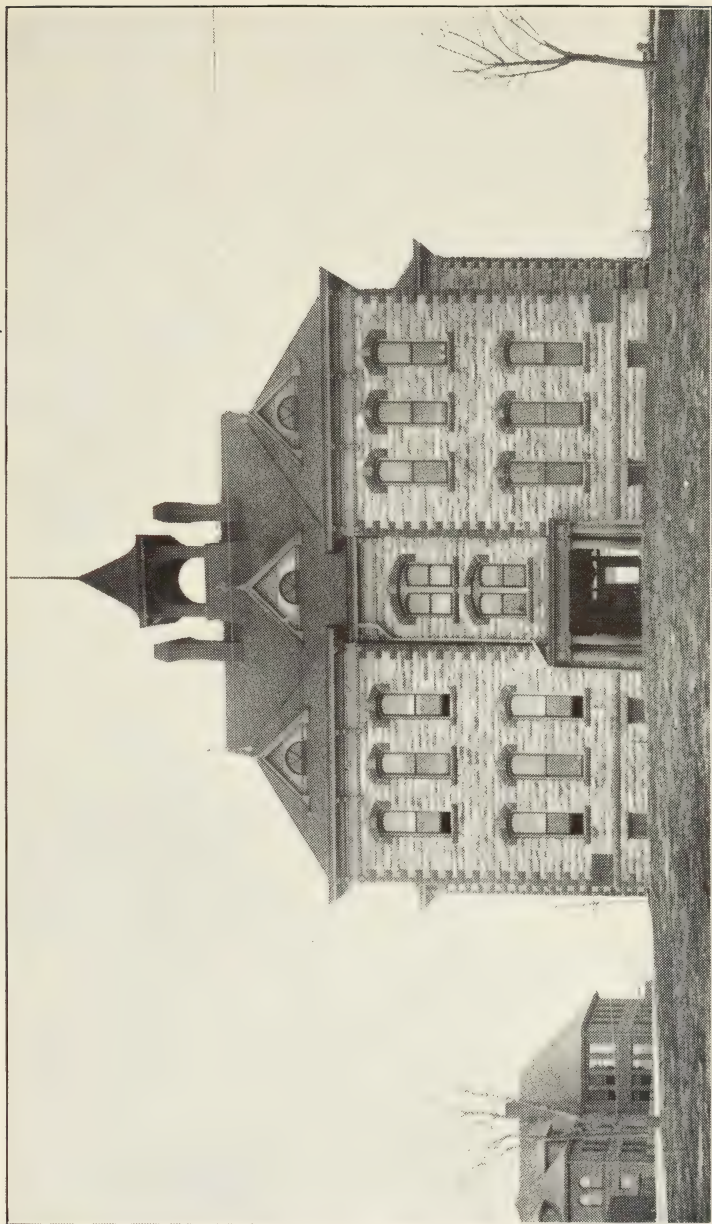






PUBLIC SCHOOL AT SOCORRO.





PUBLIC SCHOOL AT LAS VEGAS.

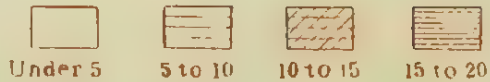




# Chart Showing Total Precipitation for 1903.



Scale in inches.

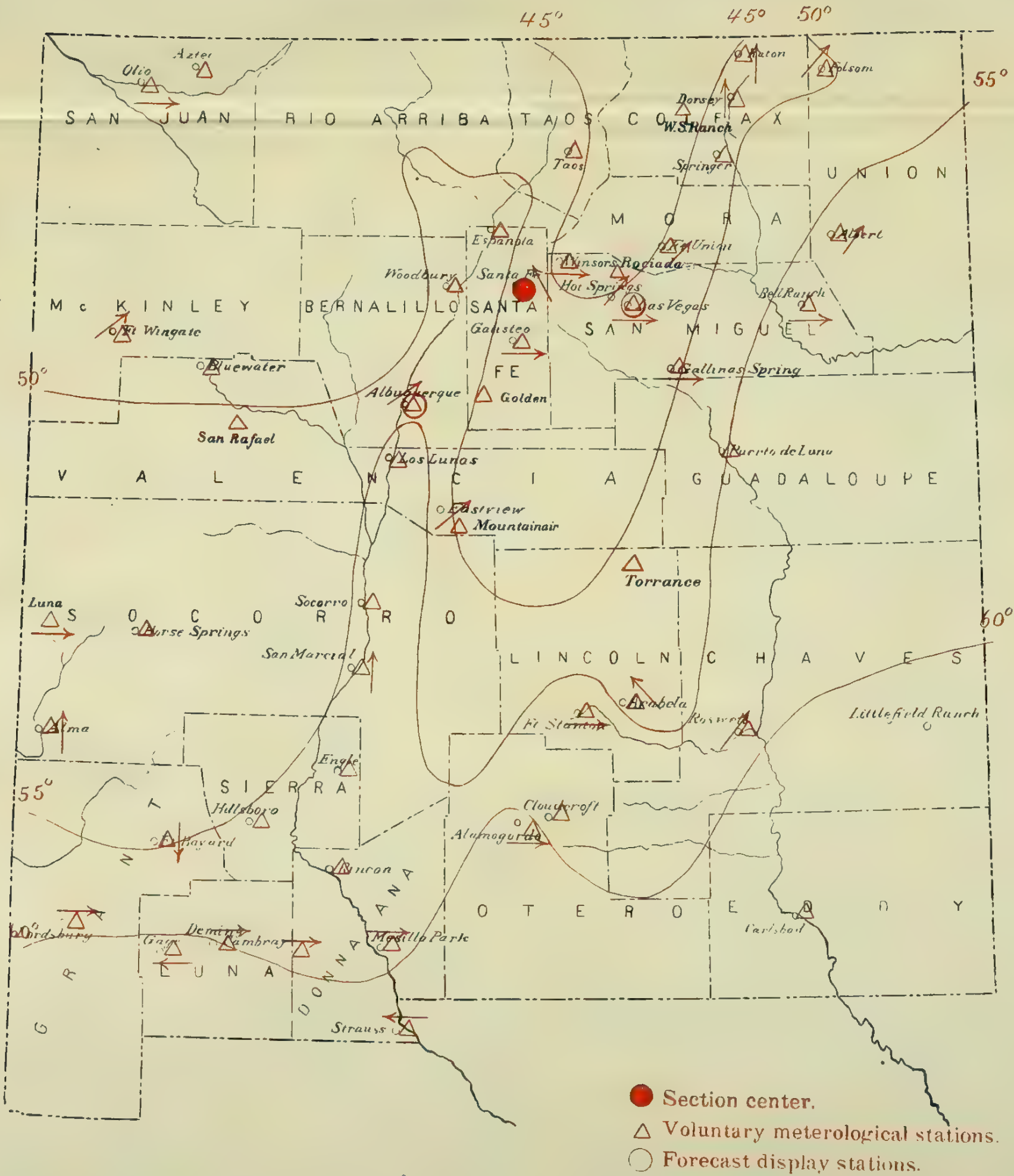






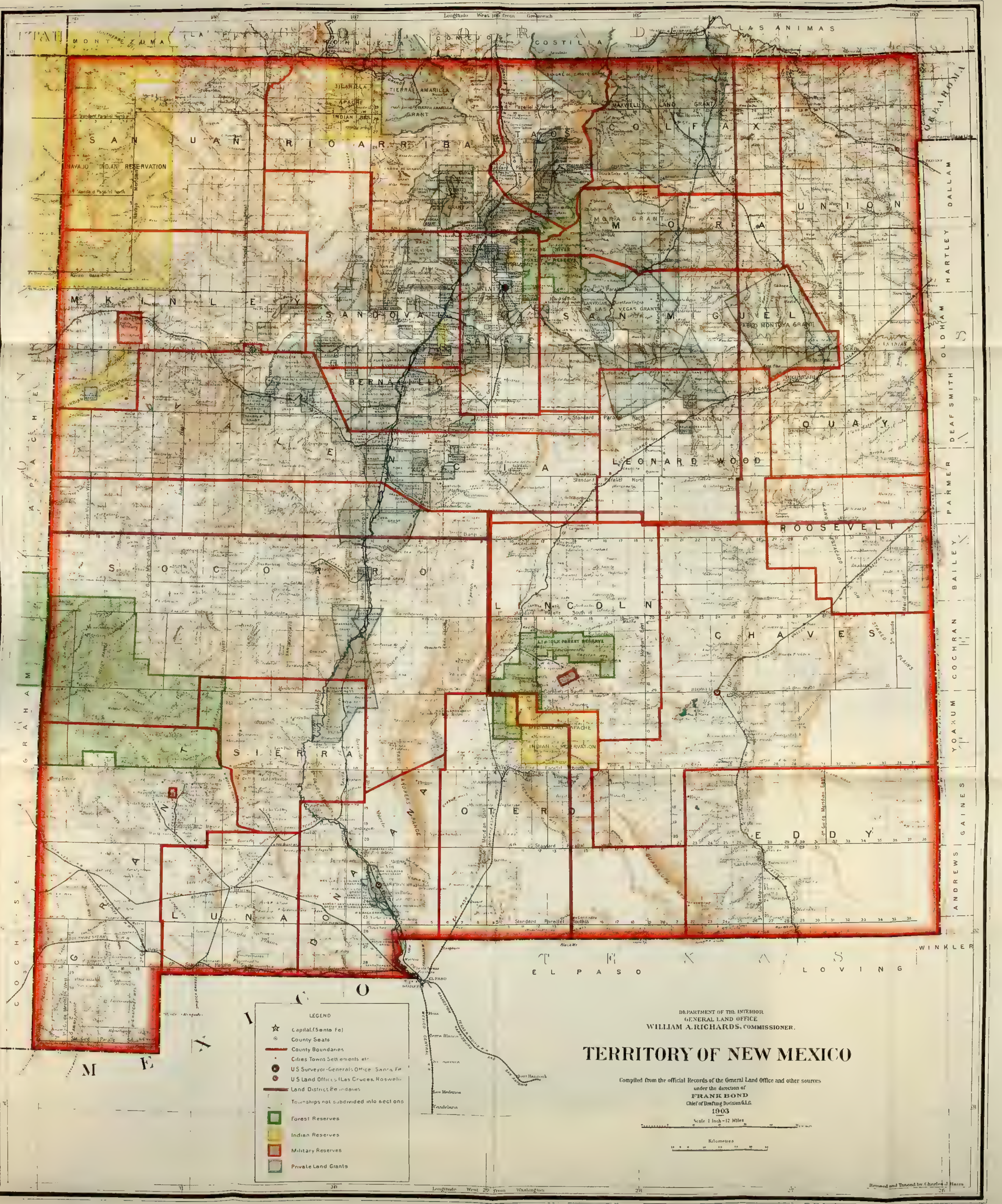
# Chart Showing Annual Mean Isotherms and Prevailing Wind Direction for 1903;

Also Location of Meteorological and Forecast Display Stations.







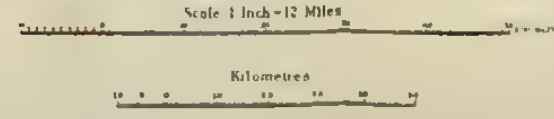


- LEGEND
- ☆ Capital (Santa Fe)
  - ⊙ County Seats
  - County Boundaries
  - Cities Towns Settlements etc.
  - US Surveyor-General's Office Santa Fe
  - US Land Office (Las Cruces, Roswell)
  - Land District Boundaries
  - Townships not subdivided into sections
  - Forest Reserves
  - Indian Reserves
  - Military Reserves
  - Private Land Grants

DEPARTMENT OF THE INTERIOR  
GENERAL LAND OFFICE  
WILLIAM A. RICHARDS, COMMISSIONER.

# TERRITORY OF NEW MEXICO

Compiled from the official Records of the General Land Office and other sources  
under the direction of  
**FRANK BOND**  
Chief of Drafting Division G.L.O.  
1903







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REPORT OF THE GOVERNOR OF OKLAHOMA.

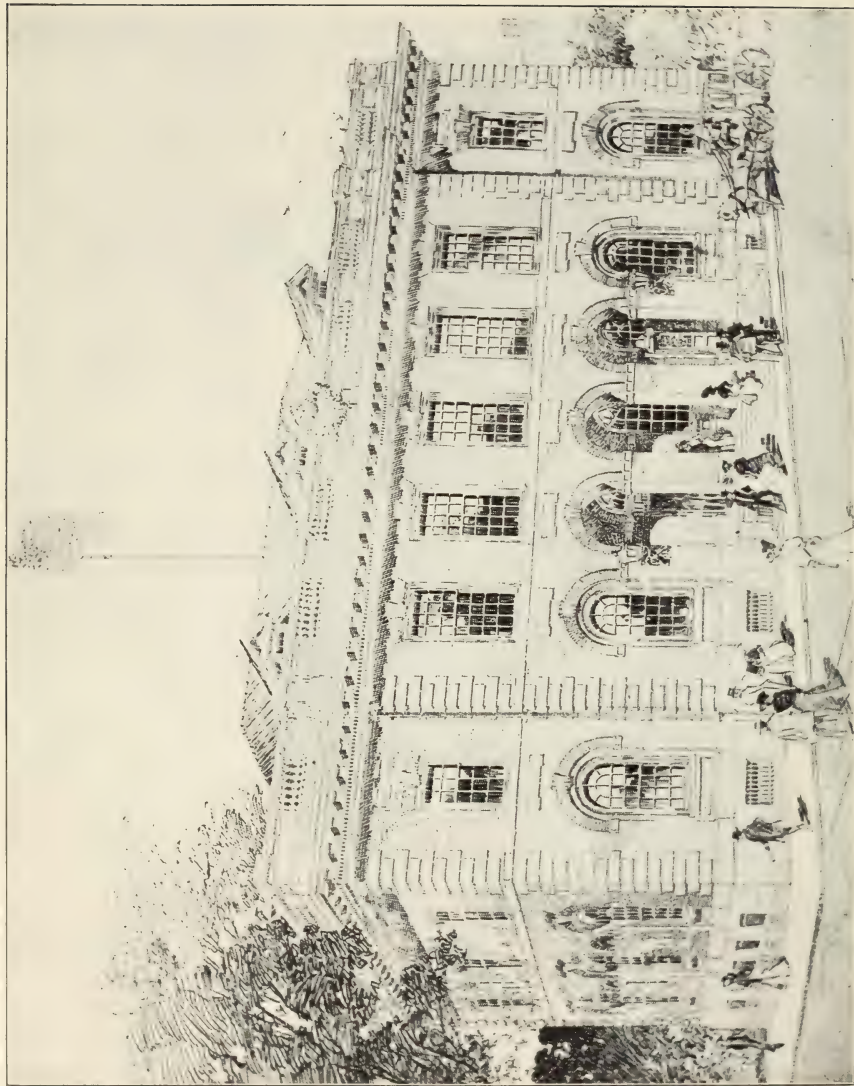
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FEDERAL BUILDING, GUTHRIE.

# REPORT

OF THE

## GOVERNOR OF OKLAHOMA.

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TERRITORY OF OKLAHOMA,  
EXECUTIVE DEPARTMENT,  
*Guthrie, Okla., September 15, 1904.*

SIR: Complying with instructions contained in your communication dated June 24, 1904, I have the honor to submit my report of the affairs and wonderful development of the Territory of Oklahoma for the year ending June 30, 1904.

Very respectfully,

T. B. FERGUSON, *Governor.*

Hon. E. A. HITCHCOCK,  
*Secretary of the Interior, Washington, D. C.*

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### PART I.

The subject-matter of this report has been classified and arranged under five headings for convenience of reference.

Part I treats of physical conditions and general description, together with some historical facts regarding the settlement of Oklahoma Territory.

Oklahoma.	Cherokee Strip.
Land of the Fair God.	The Kickapoo Lands.
Location.	Greer County.
Altitude.	Kiowa, Comanche, Apache, and Wichita.
Climate.	Indian Reservations attached to Oklahoma.
Size.	Streams and Timber.
Old Oklahoma.	Immigration.
Beaver County, No Mans Land.	Population.
Sauk and Fox, Iowa and Pottawatomie.	Summary of fiscal year.
The Cheyenne and Arapaho.	

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### OKLAHOMA.

About the time that Lewis and Clark started upon their journey to the Pacific, Congress commenced to discuss the Indian problem. Many tribes of the original inhabitants of prairie and forest had surrendered



their claims upon the lands which had been their hunting grounds; others had lost their rights by engaging in war and in treating for peace had relinquished many of their possessions. "What shall we do with the Indians?" was a question often asked a century ago. A plan was finally conceived which was believed to be the solution of the perplexing problem. That plan was to found an Indian empire some where in the far-away West, in the land recently acquired from Napoleon and about which so little was known. Many statesmen in those formative days of the young Republic dreamed of the utility of this Indian empire. It was thought that if placed there, free from the white man's intrusion and influence, the Indian, unmolested and alone, could found a state and solve the problem of citizenship and civilization.

At various times during the first half of the last century Indian tribes were transferred to this empire, which had been set apart as the Indian Territory. The white man was not invited to this domain, but without waiting for the formality of an invitation he went to help the Indian solve the problem of civilization.

Oklahoma, the last commonwealth born of the Louisiana purchase, was taken from a part of this "Indian empire." That portion of the Indian Territory which embraced Oklahoma had been ceded to the Creek and Seminole Indians when they were brought west in 1834, but they had ceded it back to the Government in 1866. The Government had declared its purpose to settle friendly Indians upon the lands acquired by the treaty of 1866. As no Indians were placed upon the lands in the Oklahoma country, and they remained for years occupied only by herds of cattle, an irresistible crusade was commenced to induce Congress to open the country to settlement, the contention being that these lands were a part of the public domain.

After years of incessant and persistent effort, the goal was reached and the people won. The lands were opened to settlement. Bishop W. Perkins, Congressman from Kansas, just before the adjournment of Congress in the spring of 1889, attached to the Indian appropriation bill a "rider" which provided for opening to settlement the Oklahoma country.

Then, on the 22d of April, 1889, came the great race for homes. Never before in the history of States or nations was a commonwealth peopled under more novel or romantic circumstances. During all of the struggle that preceded the opening it was the same old-time story. The spirit of resolution and determination that has in all ages characterized the march of the pioneer was manifested. But victory had come. It was the victory of the common people. The squatter sovereign had come to exercise his authority upon his own domain. It was his. It was his by right of conquest—conquest over all obstacles, conquest over delay, privation, and uncertainty, and conquest over all the forces that had combined to thwart him in his plans to establish a home and build a commonwealth.

Before the boomer, who, on that first memorable night slept within the borders of the newly born commonwealth, were untried experiences and unsolved problems. Hard times, poverty, battling with adverse circumstances, experiments to be made, uncertainty as to the capacity of the country, and other things too numerous to mention, confronted the early settler, but he was fortified by hope and supported by the strength of a giant resolution. Beyond the mountains of difficulty he

saw the fertile valley of success. With brave hearts and strong hands the Oklahoma pioneers faced the embarrassments of the new lands.

Who were the people by whom fair Oklahoma was rescued from the wilds and brought within the confines of civilization? They were not adventurers in quest of spoils, or mere seekers for whatever thing of interest the novel drama might produce, but they were pioneers in the true sense. They came to find a place to found that greatest of all institutions, the home. It is true that the major portion of them brought but little with them, for they possessed but little. They did bring with them a kind of riches more precious than gold—good character, hopeful hearts, clear heads, and strong hands. They were destined victors. Soon after the opening the dugout, the sod house, and the unpretentious prairie cottage appeared in countless numbers all over the new land.

It is true that there were not many luxuries in those humble homes. There were hard times experienced. In those homes were hope and faith—hope in the future and faith in their own efforts to succeed.

But all this was years ago. The hand of magic—the magic of American industry and courage—touched the dugout, the sod house, and the prairie cottage and transformed them into splendid homes. They have followed the spirit of the age and expanded. They are homes in which can to-day be found just as many of the comforts of life, just as much refinement, just as much taste, and just as much culture, as can be found in any of the older commonwealths. No place in the world contains more happy, prosperous homes, according to population, than Oklahoma.

Oklahoma is, as has been suggested, the youngest child of that splendid family of commonwealths bequeathed to our nation by the Louisiana purchase, but while last she is not least, not least in moral, intellectual, and material development, not least in the diversity and greatness of her resources.

Oklahoma is the midway of the continent. She is the central point between the East and the West, as well as the point where the North and the South meet and shake the hand of friendship. Her people are from all parts of the Union—every State and Territory is represented. The energy and progressive spirit from all the States manifest themselves in Oklahoma. Her products are the products of the entire country. Upon a single farm in our splendid Territory can be seen growing at the same time the products that grow in the States from Minnesota to Florida, and from Maine to California. Again, Oklahoma is an agricultural country. Her wheat, cotton, corn, and other farm products are unsurpassed in quantity and quality. The Oklahoma fruit is a marvel to fruit growers all over the country. In no part of the United States can fruit be raised more extensively and of better quality than in Oklahoma. This year, as in the past, our fields have been filled with golden grain and our orchards with delicious fruit.

In days gone by the Spaniard searched for gold on the soil of our Territory. Tradition says that he did not find it. The Oklahoma farmer is coining the gold that the Spaniard failed to find—coining it from the soil.

“LAND OF THE FAIR GOD.”

In the historic land of the Montezumas, while he toils and hopes, the Mexican Indian dreams of the day when the Fair God will return and



restore his people to the glory of the days when, according to tradition, they lived in a land where happiness was the only ambition and righteousness the only law.

To the imaginative mind of the child of old Mexico, the Fair God of the ancient Aztecs was a god of perfection and beauty. Wherever he journeyed, by a touch of his magic hand, the sterile places became gardens of beauty; vice gave way to virtue; despair vanished into hope; sorrow was changed to joy, and death surrendered to life. The Fair God was the embodiment of the good. Nothing evil could remain in the domain over which he reigned, nor could aught but beauty dwell in the land through which he passed.

Long and patiently, but faithfully, have the children of the Aztecs waited for the coming of the Fair God to restore their land to the beauty and grandeur that characterized it in their traditions before the coming of the haughty Castilian from beyond the seas.

No doubt that he had this pleasing Mexican tradition in mind when Milton W. Reynolds, a distinguished journalist who once accompanied Henry M. Stanley across the American Continent, stood on a beautiful prairie in Oklahoma on the morning after the first opening, looking at the magnificence of the scene before him, enraptured and thrilled by the transcendent beauty of the picture presented by the verdant prairie in its springtime mantle of unrivaled loveliness, and exclaimed, "The Land of the Fair God." Milton Reynolds rests beneath the soil of the land to which he applied the above significant term, but Oklahoma still continues to be, and will continue to be called, very appropriately, too, the "Land of the Fair God."

#### LOCATION.

Oklahoma is situated between the thirty-fourth and thirty-seventh parallel north latitude, and principally between the  $96^{\circ} 30'$  and  $100^{\circ}$  west longitude.

The State of Kansas lies along the northern boundary, the Indian Territory on the east, Texas on the south and west. A small portion of northwestern Oklahoma (Beaver County) is bounded on the west by New Mexico.

#### ALTITUDE.

The altitude at its highest point, in Beaver County, in the extreme northwest, is 3,900 feet; at its lowest point, in Payne County, in the eastern part, it is 776 feet. Thus it will be seen that the western ascent is rapid.

#### *Altitudes in Oklahoma.*

	Feet.		Feet.
Alva.....	1,330	Council Grove .....	1,234
Anadarko.....	1,171	Dale.....	1,039
Arapaho.....	1,560	Dickson.....	1,219
Beaver.....	2,500	Doggett.....	910
Bridgeport.....	1,425	Earlboro.....	1,028
Burnett.....	1,200	Edmond.....	1,191
Calumet.....	1,375	El Reno.....	1,326
Cashion.....	1,014	El Reno Junction.....	1,334
Chandler.....	900	Enid.....	1,244
Choctaw City.....	1,109	Fort Reno.....	1,345
Clifton.....	1,030	Garber.....	1,183



*Altitudes in Oklahoma—Continued.*

	Feet.		Feet.
Geary .....	1,545	Norman .....	1,159
Granite .....	1,591	Oklahoma City .....	1,200
Guthrie .....	932	Pawnee .....	786
Hardesty .....	3,000	Perkins .....	794
Hennessey .....	1,159	Perry .....	871
Hobart .....	1,528	Pond Creek .....	1,046
Jones City .....	1,145	Ponca City .....	946
Kenton .....	3,900	Ripley .....	776
Kildare .....	1,102	Shawnee .....	1,045
Kingfisher .....	1,048	Stillwater .....	832
Lakeview .....	1,214	Stroud .....	910
Lawton .....	1,250	Sweeney .....	1,070
Luther .....	935	Union City .....	1,319
McLoud .....	1,057	Virginia .....	1,206
Mangum .....	1,585	Waukomis .....	1,238
Medford .....	1,091	Waynoka .....	1,464
Mountain View .....	1,320	Weatherford .....	1,650
Mulhall .....	936	Wellston .....	900
Munger .....	1,195	Wichita Mountains .....	3,000
Newkirk .....	1,149	Woodward .....	1,880
Noble .....	1,158	Yukon .....	1,299

## CLIMATE.

The climate is delightful during most of the year and corresponds to that of the other States in the same latitude, or probably more nearly approaches the climatic conditions of "sunny Tennessee."

There are some cold days during the winter, but they are not of long duration. Summer time brings some warm days, mostly during the months of July and August; but although warm, these days are seldom oppressive—not so oppressive as the summer days in some of the States hundreds of miles to the north. It makes no difference how warm may be the day, it is invariably followed by a night which, with its balmy, invigorating breeze, is seldom equaled and nowhere surpassed. The "spicy breezes that blow soft o'er Ceylon's Isle" can be no more refreshing or health-inspiring than the exhilarating air of an Oklahoma night.

## SIZE.

The length of the Territory, measured from extreme points from east to west, is 365 miles, and the width, from extreme points from north to south, is 210 miles.

The States of Massachusetts, New Hampshire, New Jersey, Rhode Island, and Vermont could all be placed within the boundary lines of Oklahoma and leave 2,787 square miles unoccupied, or enough to include over half of Connecticut.

## "OLD OKLAHOMA."

[Area, 2,000,000 acres.]

The above title is often applied to that tract of country which is known as original Oklahoma, the beginning of Oklahoma Territory, and the opening of which was the initiatory step to forming a Commonwealth which must in the "course of human events" become one of the greatest States in the Union.

The bill which opened Oklahoma to settlement became a law on the 22d day of March, 1889, the President issued his proclamation on the 22d day of the same month, and the country was opened on the 22d day of April following.

In 1834 the Creek Indians were given the lands which they now occupy, with the country between the South Canadian River and the Cherokee Outlet west to the one hundredth meridian. The Seminole Indians about the same time were granted a tract of land which is still their home, lying west of the southern portion of the Creek Reservation, between the north and the south forks of the Canadian River west to the one hundredth meridian, but south of the Cherokee Outlet, as the North Canadian flows through the western portion of the outlet from northwest to southeast. The lands ceded to the Seminoles were a portion of the lands ceded to the Creeks. The Creeks, by virtue of their treaty, claimed all of the lands west of their home reservation between the South Canadian River and the Cherokee Outlet to the one hundredth meridian. The Seminole claim, as above stated, extended between the Canadians to the one hundredth meridian, embracing a portion of the Creek claim.

A council was held with many Indian tribes at Fort Smith, Ark., in 1866. At that time and place the Creek and the Seminole Indians relinquished to the Government their claim to the lands west of their home reservations. The lands thus relinquished embraced original Oklahoma. At that time the declared purpose of the Government was to settle other Indian tribes upon these lands and consummate the early dream of Congress, by establishing an "Indian empire in the West."

Several tribes of Indians were settled upon portions of the country acquired by the treaty of 1866, but no action was taken relative to the country out of which came "Old Oklahoma." Early in the seventies an agitation was commenced to induce the Government to open the land to settlement, the claim having been set up that it was no longer Indian land but a part of the public domain. Beginning with the year 1880 determined efforts were made to force the opening of the "Oklahoma country." Boomer colonies were organized along the north line of the Cherokee Outlet, and the olden days of the "prairie schooner" were brought vividly back to memory by the sight of the many caravans of canvas-covered vehicles that thronged the borders of the "promised land." Chief among the agitators, and the man to whom Oklahoma is indebted for her existence as a Territory more than to any other one of the early crusaders, was Capt. David L. Payne, the prince of the Oklahoma boomers. He battled long and well for the rights of the people. He was one of the undaunted heroes, whose courage is never abated by reverse or shaken by defeat. Five times, with a colony of boomers, this resolute leader entered Oklahoma, determined to test the rights of the people to the land. He was several times arrested and his followers ejected from the country by United States troops, but these apparent reverses only seemed to stimulate him to more determined resolution and greater effort. He was tried in court for trespassing, but was cleared of the charge. The court sustained his contention that Oklahoma was public domain.

The irrepressible Payne did not live to enjoy the fruits of his splendid victory. Like the leader of the Hebrews, he died with the promised land in sight. "He lost, but losing won." An effort is being made in Oklahoma to erect a suitable monument to his memory—

a commendable effort in honor of a worthy man. However, Oklahoma, the wonderland of the Southwest, stands as a perpetual monument sacred to the memory of David L. Payne.

After the death of Captain Payne, in 1884, the boomers continued the crusade under the leadership of various persons, prominent among whom was Capt. W. L. Couch. Captain Couch was killed at Oklahoma City in a contest over a claim, after the opening of the country.

Before the opening the Oklahoma boomer occupied the attention of the press, pulpit, and public generally. The Oklahoma boomer was the "man of the hour." All eyes were resting upon him. After the memorable race (for "Old Oklahoma" was opened on the horse-race system) on the 22d of April, 1889, the Oklahoma boomer passed into history, and the Oklahoma "sooner" took his place in the arena of public controversy and discussion. The President's proclamation had declared that anyone who should "enter upon and occupy any portion" of the land before the designated time should be debarred from any homestead rights. Some observed the restrictions of the proclamation and some did not. Many contests followed. Actions for perjury were instituted in the courts and many convictions were secured.

The counties of Logan, Oklahoma, Cleveland, Payne, Canadian, and Kingfisher were formed out of "Old Oklahoma." Additions to all of these counties have been made from lands acquired from time to time by the opening of adjacent Indian reservations.

Beaver County was not a part of "Old Oklahoma" but was added in 1890, and was called the "seventh county."

#### BEAVER COUNTY—NO MAN'S LAND.

That section of the country formerly known as the neutral strip or No Man's Land, 167 miles in length and  $34\frac{1}{2}$  miles in width, containing 3,687,360 acres, was added to Oklahoma in 1890. It is now Beaver County. It is located between the one hundredth and one hundred and third meridians, and between the parallels  $36^{\circ} 30'$  and  $37^{\circ}$  north latitude. Although once claimed as a part of Mexico, and later on as a part of the Republic of Texas, this "neutral strip" was never a part of the State of Texas. When Texas was admitted into the Union the question of extending any portion of a slave State north of  $36^{\circ} 30'$  was discussed, and as such action would have been in violation of the Missouri compromise, before her admission Texas relinquished to the United States her claim on the land north of  $36^{\circ} 30'$ .

The line of the Louisiana purchase followed Red River between the ninety-fifth and one hundredth meridians, and thence up the one hundredth meridian to the Arkansas River. By treaty the Cherokee Indians, when they were settled upon the lands which they now occupy, had been granted a "perpetual outlet as far west as the sovereignty of the United States and their right of soil extend." At that time south of the Arkansas River the sovereignty of the United States extended only to the one hundredth meridian.

When Kansas Territory was organized it was at first the intention to locate the south line on the parallel of  $36^{\circ} 30'$ , but it was pointed out to Congress that this would be an intrusion upon the rights of the Cherokee Indians, who had been guaranteed a portion of the land contemplated in the Territory of Kansas as a "perpetual outlet" to the western dominion of the United States. Kansas was finally organized with



the thirty-seventh degree of latitude as the south line, thus establishing a greater portion of the north line of the neutral strip.

Later on Colorado Territory was organized with the thirty-seventh degree of north latitude as the southern boundary. This completed the northern limits of No Man's Land—the southern lines of Kansas and Colorado on the thirty-seventh degree of latitude. New Mexico was organized with its eastern line on the one hundred and third meridian, hence the work of organization of territory around the neutral strip was complete. Texas could only extend to  $36^{\circ} 30'$  north latitude, as the compromise between the free State and slave territory prohibited a further northern extension of a slave State. The Cherokee Outlet could only extend to the one hundredth meridian, as that meridian was the western boundary of the United States south of the Arkansas River at the time when the guaranty of the outlet was made to the Cherokees by the Government. Kansas could not be extended farther south than the thirty-seventh degree of north latitude without intruding upon the lands guaranteed to the Cherokees for an outlet. New Mexico only extended east to the one hundred and third meridian. Therefore, in the organization of the Commonwealths around it, No Man's Land was left surrounded by government, within a government, and yet without a government. It was not for years within the jurisdiction of any court, nor was it subject to the laws of any organized Commonwealth. It was a land where the only law was the law of conscience, and the only restraint against crime, on those so disposed, was a fear of public sentiment, which stood as a barrier to the acts of the would-be transgressor on the rights of others. In the main, however, conscience, which is the basis of the laws of civilization, held dominion over the acts of the people who lived in this land without law.

There were many interesting features connected with the early settlement of No Man's Land. In the year 1880 settlement was made at a point which is now the location of Beaver, the present seat of government of Beaver County. For ten years the inhabitants of this domain lived free from the restraints of law and beyond the reach of the penalties imposed by courts, and demonstrated to the full extent the law-abiding characteristics of the American citizen.

There was but comparatively little crime committed in this country during all of the time that it was beyond the protection of law, and when carefully studied it furnishes a splendid commentary upon the instincts of the western pioneer to observe the regulations of society and to follow the beaten path of those hardy people who have marched in the vanguard of civilization across the continent.

There was a pressing demand for a government, however, not so much to protect against lawlessness as to promote the varied interests of a community in need at least of municipal government. An effort was made in 1886 to organize "Cimarron Territory" and provide for a Territorial government. A legislative assembly, consisting of a council and house of representatives, was organized. That assembly passed a bill creating Cimarron Territory, and provided for electing a Delegate to Congress, a governor, and secretary for the Territory. Dr. O. G. Chase was elected Delegate to Congress, J. R. Linley was elected governor, and T. P. Braidwood secretary of Cimarron Territory. Doctor Chase, the elected Delegate, presented his credentials to Congress in December, 1887, claiming to be a legal member of that body as the Delegate from the "new Territory." He was not recognized.

In 1887 a bill passed both Houses of Congress providing for attaching the neutral strip, or No Man's Land, to Kansas, but was vetoed by the President. Again, in 1888, the Delegate elected from Cimarron Territory presented his credentials to Congress, and was again denied a seat in that body.

The legislature of Cimarron Territory passed many laws, but there was no way to enforce them. Oklahoma was opened to settlement in 1889. That event put an end to all efforts to create a government for No Man's Land, as a large percentage of the inhabitants left for the new land of promise. In 1890, No Man's Land, the neutral strip, or "Cimarron Territory," became Beaver County.

Thus ended a dream of years on the part of those who sought to establish a Commonwealth in that country which came to the United States with the Republic of Texas, but was never a part of any State or Territory, and remained No Man's Land until it was attached to Oklahoma.

During the past year this country has increased rapidly in population and the old-time vision of government is at last realized.

#### SAC AND FOX, IOWA, AND POTTAWATOMIE.

The Sac and Fox, Iowa, and Pottawatomie reservations, embracing 1,282,434 acres, were opened for settlement September 22, 1891. This land is located in the eastern portion of the Territory, and includes portions of the counties of Pottawatomie, Lincoln, Cleveland, Logan, Oklahoma, and Payne. No county was formed wholly out of the land acquired at this opening, but the territory included was divided among the six counties enumerated above.

This opening was conducted on the "horse-race" plan, every contestant running for something and taking what he could get, provided he was not beaten out of that. The customary experience of the settler in the new country fell to the lot of the people who moved onto these lands. They experienced their share of the contests and disputes about the priority of rights.

This country is very rich in agricultural possibilities, cotton and corn being the leading products. Potatoes are extensively raised in Pottawatomie County. The potato crop in this country matures early and is shipped to the Northern States before the product there is matured and ready to be placed upon the market.

#### THE CHEYENNE AND ARAPAHO.

The opening of the Cheyenne and Arapaho country, embracing 4,297,771 acres, took place on the 19th day of April, 1892. This country is located west of Old Oklahoma, south of the Cherokee Strip, and extends to the western boundary of the Territory. Within its borders are included the counties of Blaine, Custer, Dewey, Day, Roger Mills, Washita, and portions of Canadian and Kingfisher.

In this area numerous skeletons of huge animals, presumably the mastadon, have been discovered buried deep in the sands along the banks of the North Canadian River and other streams. Large canyons, filled with cedar trees in many instances, are to be found in this country. During the early days of the settlement many of these cedar forests were devastated by "timber cutters," who carried on quite an



extensive trade in cedar. Many arrests were made by United States marshals, but the arrests availed but little, as most of the choicest cedar timber was destroyed.

Great cement deposits have been discovered in this country. The product is of the very finest quality, and the supply is considered almost inexhaustible. Salt has also been found in great abundance in Blaine County, and is now being developed.

This country was opened on the "horse-race" plan, and numerous contests resulted. In the march of progress, however, those early day controversies and embarrassments incidental to the settlement of a new country have been forgotten, and this land, once called the "short-grass country," is now a land, not only of promise, but prosperity. The "C. and A. country," as it has been called, is an agricultural area.

#### CHEROKEE STRIP.

The Cherokee Strip, containing 6,014,239 acres, was opened to settlement on the 16th day of September, 1893. The land embraced in that opening lies in the northern portion of Oklahoma, extending from the Arkansas River on the east to the one hundredth meridian, or the line of "No Man's Land," now Beaver County, on the west.

When a treaty was made with the Cherokee Indians in 1828, locating them upon the lands which they now occupy, they were guaranteed a perpetual outlet to the western extension of the United States. That outlet was known later on as the Cherokee Strip. The United States at that time did not extend west of the one hundredth meridian, on the parallels that bounded the outlet. While the Cherokees never possessed rights as proprietors to this land, the Government had conceded them certain rights thereto by virtue of their treaty when the outlet was guaranteed.

The Strip country now includes the counties of Pawnee, Noble, Kay, Grant, Garfield, Woods, Woodward, and a small portion of Payne.

The Strip prior to the opening attracted widespread attention. The fame of that land of beauty had been heralded afar and homeseekers came from hundreds of miles away, intent upon acquiring possessions in the much-coveted land.

This country was opened by the booth system. While the "horse-race" features of the opening were retained, every aspirant was required to secure a booth certificate before he was legally allowed to "enter upon or occupy" any portion of the land. Booths were established upon the borders of the country in numerous places, and under the regulations no person was to be allowed to file upon a tract of land unless able to produce a booth certificate to prove that he had not played "sooner," a term applied to persons in Oklahoma who have entered upon land before it was opened to settlement. The booth system was not a success. It did not remedy the evils that it was intended to overcome. Some procured booth certificates and then entered illegally upon the lands. Others produced certificates in assumed names and transferred them to "sooners." Many things were resorted to to thwart the plans of the Government, and the results were innumerable contests and disputes over land. But all these things passed away with the "early days," and have almost been forgotten in the rapid development and prosperity of that portion of the Territory.



The Strip is an agricultural country, and has made wonderful development. Some of the best homes in the Territory are to be found in that region.

#### THE KICKAPOO LANDS.

The Kickapoo lands were opened for settlement on the 23d day of May, 1895. These lands contained 206,662 acres, and after settlement were attached to Lincoln, Oklahoma, and Pottawatomie counties.

The Kickapoo Indians had been disposed to resent all efforts made by the Government to treat for their lands and at first refused to listen to the offers made by the Cherokee Commission appointed in July, 1889, to treat with the tribes in the Indian Territory. Later a treaty was negotiated with these Indians and the surplus lands not taken in the allotments were thrown open to settlement. The "horse race" was the feature of this opening and considerable trouble—contest and disputes—resulted.

Before the opening of the Kickapoo country an agent of the Territory of Oklahoma had selected and set apart as indemnity lands, to be utilized by the Territory in the interest of public schools, 102,431.91 acres. This agent had made a contract with the governor of Oklahoma, and said contract was ratified by the legislative assembly of the Territory early in 1895, to have certain lands set apart in the Kickapoo country by the Interior Department to indemnify the Territory against the loss of sections 16 and 36 in the Osage and Kaw Indian reservations. It was held that the reservations above named would some day be opened for settlement and become a part of Oklahoma, and whereas the Indians owning these lands have a title to all of it, having received deeds to the same, there would be no lands to set apart for school purposes, and the Territory, or future State, would be deprived of the benefits unless indemnity lands in lieu thereof were taken elsewhere. The agent received 10 cents per acre for all the indemnity lands which he secured for the Territory. The result has not been for the best in the Kickapoo country. Large tracts of indemnity school land were taken in a body. The lessees on these lands have been subjected to great inconveniences in the way of local government and schools. These lands are not subject to taxation. There are no revenues derived for school or governmental purposes except personal taxes. Fifteen per cent of the rental on these lands is returned to the school districts from which it was derived, but it is insufficient to maintain proper facilities for educating the children.

If statehood comes soon the future State can make some disposition of these lands and relieve the people who occupy them. If statehood should be delayed Congress should give the much-needed relief.

#### GREER COUNTY.

By virtue of a decision of the Supreme Court of the United States, rendered on the 16th day of March, 1896, Greer County, embracing 1,511,576.17 acres, was added to Oklahoma. This country had formerly been claimed as a part of the State of Texas. That State had exercised jurisdiction over the disputed territory for several years. By act of Congress, passed May 2, 1890, the Attorney-General of the United States was directed to commence action in the Supreme Court

of the United States against the State of Texas to determine the rightful proprietorship to the land. The case was argued in October, 1895, but not decided until the following March.

The original boundaries of the Louisiana purchase were problematical. The seller did not know what he had to sell and the purchaser did not know the extent of the purchase. The United States claimed the Tejos, or Texas country. Spain refused to concede the claim to Texas. No one knew the facts. There was no definite boundary line. In 1819, when our country negotiated the treaty with Spain whereby Florida was ceded to the United States, the line of the Louisiana purchase was, as it was at that time believed, located and definitely determined. After several propositions were submitted by the representative of the United States and by the representative of Spain, a line was agreed upon which at that time apparently adjusted the dispute between the two nations, but in after years became a subject of controversy between the United States and the State of Texas. The boundary agreed upon in 1819 commenced at the Gulf of Mexico, at the mouth of the Sabine River, continuing north along the west bank of the stream to the thirty-second degree of north latitude, thence north to the Rio Roxo, or Red River, thence west along Red River to the one hundredth degree of longitude west from London, thence north to the Arkansas River, and following the southern bank of the Arkansas River to its source, or to the forty-second degree of north latitude, and then west to the "South Sea."

A map then in existence was referred to in the treaty, after designating the boundary line, as follows:

The whole being laid down in the Melish map of the United States, published at Philadelphia, improved to the 1st of January, 1818.

The Republic of Texas assumed control of all the territory which Spain had claimed by virtue of the concessions made by the United States in the treaty of 1819. That treaty had stipulated that the line between the United States and the Spanish possessions should follow "the course of the Rio Roxo westward, to the degree of longitude 100 west from London and 23 from Washington." The final dispute arose over the two forks of the Rio Roxo, or Red River. Texas claimed that the Rio Roxo of the treaty of 1819 was the north fork of the Red River, the stream which forms the north and eastern boundary of Greer County. (That is if the treaty extended far enough up the stream to reach either fork.) The United States claimed that the Rio Roxo of the treaty included the southern branch, or the "Prairie Dog Town Fork," the stream which forms the southern boundary of the county. The State of Texas claimed that the Melish map was the basis of the treaty and that the contracting parties could not deviate from it, and that the one hundredth meridian as indicated on that map should be recognized as the boundary line where it intersected the Red River. The United States contended that while the Melish map was in effect a part of the treaty, yet it could not be taken as a final basis in locating the boundary, claiming that both the United States and Spain contemplated a further adjustment of the matter by the appointment of a joint commission, as indicated in article 4 of the treaty, which provided for the appointment of a "commissioner and a surveyor" by both nations "to fix this line with more precision and to place the landmarks which shall designate exactly the limits of both nations,"



etc. Article 4 of the treaty (1819) further provided that the joint commission so appointed "shall make out plans and keep journals of their proceedings and the result agreed upon by them shall be considered as a part of this treaty and shall have the same force as if it were inserted therein." Upon that provision in the treaty the United States claimed that the original treaty was not complete, and that the Melish map was not to be taken as a final basis for settling the dispute, and that said map was only a part of the treaty and subject to modification as later discoveries might suggest or require, just the same as any other feature of the treaty.

It was also pointed out by the United States that the Melish map was incorrect and located the one hundredth meridian about 100 miles east of the real or astronomical meridian. The map upon which the contention was based located the one hundredth meridian east of the confluence of the two forks of the Red River. The State of Texas claimed that it made no difference whether the Melish map was right or wrong in locating the one hundredth meridian, that it had located that meridian east of the junction of the two branches of the Red River and that all territory west of that meridian (the meridian of the map) was relinquished to Spain by the treaty of 1819, hence it must belong to the State.

It was further contended or suggested by the State, however, that if the court presumed to adhere to the true one hundredth meridian instead of the meridian of the Melish map, as the one contemplated by the treaty of 1819, there were evidences to show that the Spaniards had believed that their domain extended to the north fork of Red River, and they had laid out roads and established habitations along the river at various points.

In September, 1850, an act was passed by Congress locating the northern, western, and southern line of Texas. The provisions of this act were promptly accepted and ratified by the State of Texas. Thus a contract was entered into by the legislative branches in the nation and the State designating the boundary line. The line designated in the act of Congress and accepted by the State of Texas commenced at a point where the—

one hundredth meridian intersects the parallel  $36^{\circ} 30'$  north latitude, thence due west to the one hundred and third meridian, thence south to the thirty-second degree of north latitude, thence on that parallel to the Rio Bravo del Norte, thence with the channel of that river to the Gulf of Mexico.

It was held by the court that the "one hundredth meridian" referred to in the act of 1850 and that act ratified by the State of Texas must have been the true one hundredth meridian and not the meridian of the Melish map. Then as the true one hundredth meridian was held to be the meridian contemplated in the treaty of 1819, the court held that the south and not the north fork of Red River was the river of the treaty and that the lands embraced in Greer County belonged to the public domain, "subject to the exclusive jurisdiction of the United States of America" and not to the State of Texas. Thus it will be seen that the boundary line of the Louisiana purchase between the United States and the Spanish possessions was not legally determined until it was settled by a Supreme Court decision ninety-three years after the date of purchase.

Greer County was made a part of Oklahoma by Congressional act in May, 1896. The act provided that the laws relating to Oklahoma



should be extended to Greer County at once and that all matters pending in the courts should be adjusted and determined by the courts of Oklahoma. It was also provided that all public records of Greer County, Tex., should become the public records of Greer County, Okla., and that all pending county business should be transacted under the laws of the Territory of which Greer County had been made a part.

At the time of the annexation of Greer County to Oklahoma many school teachers in that county held unpaid vouchers for services rendered as teachers while the county was under the laws of the State of Texas. These vouchers had been issued for the school years 1895-1896, before the date of the Supreme Court decision, which declared Greer County under the jurisdiction of the United States. The teachers who held these vouchers applied to the State of Texas, asking that they be compensated by that State, as the services were rendered while the county was still under its jurisdiction. Texas refused to comply with the request, claiming that whereas Oklahoma had acquired the taxable property of Greer County the teachers should no longer look to the State for compensation. In 1903 a bill was passed by the legislative assembly of Oklahoma, which appropriated from the general revenue fund the sum of \$4,143.86 to pay the claims of the Greer County teachers.

Greer County is adapted to agricultural pursuits. It has made rapid progress during recent years.

#### KIOWA, COMANCHE, APACHE, AND WICHITA.

These reservations, comprising nearly 4,000,000 acres, were opened to settlement on the 6th day of August, 1901. For the first time in the history of an Oklahoma opening the "horse race" was eliminated and the drawing plan was adopted. Each applicant for land was required to register, the names were placed in a large box and were then drawn out by a disinterested person, numbered, and the applicant allowed to file in the order of the number thus drawn. The plan has proven a very satisfactory one, as most of the contests and controversies characteristic of other openings have not resulted from the drawing system.

The country embraced in the reservations above named has developed rapidly.

The Wichita Mountains are included in this area. For several years there has been more or less excitement about gold in connection with these mountains, but if the much-sought-for metal abounds there it has not been discovered in paying quantities.

Cement has been found in great quantities in portions of this country. The country is adapted to agriculture.

#### INDIAN RESERVATIONS ATTACHED TO OKLAHOMA.

In April, 1904, the Otoe, Ponca, Missouri, and Kaw reservations were by Congress attached to Oklahoma by virtue of an amendment to the Indian appropriation bill.

The whole of the Kansas Reservation was attached to Kay County. Portions of the Ponca Reservation were also attached to Kay County. Portions of the Missouri, Otoe, and Ponca reservations were added to Noble County. Portions of the Otoe and Missouri reservations were attached to Pawnee County.

## STREAMS AND TIMBER.

The country is well watered. The streams of Oklahoma flow in a southeasterly direction. The principal rivers are the Arkansas, the Chikaskia, the Salt Fork, the Cimarron, the North Canadian, the South Canadian, the Washita, and the North Fork of Red River.

Timber abounds plentifully along many of the streams, and has proven a great factor in the development of the country. At least 30 varieties of wood have been reported found in Oklahoma. Prominent among the forest trees found in the Territory might be mentioned oak, walnut, elm, cottonwood, hackberry, hickory, pecan, cedar, ash, and numerous other kinds.

Some very valuable walnut trees have been found—"curled walnut." The grain of this tree is very peculiar, adapted to the manufacture of fine furniture and ornaments. Some of these peculiar walnut logs have been shipped from Oklahoma and sold at fabulous prices.

Large shipments of Oklahoma cedar have been made to Europe, where it was especially used in the manufacture of pencils.

## IMMIGRATION.

The immigration to Oklahoma during the past year has been quite heavy. Over a million and a half acres of public land has been taken up by the homesteader. This alone means an increase in population of from 40,000 to 50,000 people.

During one month (April, 1904) there were nearly 500 transfers of farm property reported by the recorders of each county. The larger portion of the buyers of farm property were home seekers from other States. A conservative estimate of the increase in population from this source would be 20,000.

In addition to the above our cities and towns have had many acquisitions to their numbers, which will doubtless swell the total immigration to nearly 100,000.

Much credit is due the emigration agencies of the various railroads for giving publicity of our resources, advantages, variety of crops, and wonderful achievements. By persistent circulation of publications illustrating this fair land, many people in the older sections of the country have become interested and induced, by cheap rates, to visit and investigate for themselves.

The class of immigration which has been pouring into Oklahoma is of the highest type. They are people young and energetic, with some capital to invest, with education, with an appreciation of religious and social advantages, morally and physically equipped to become some of the best citizens of the future State of Oklahoma.

## POPULATION.

The population of the Territory has steadily increased during the past year. Our cities and towns have had a thrifty growth. New towns have sprung up along new lines of railroad, and there has been a large immigration to our vacant lands.

As the annual enumeration by the township assessors is not compulsory, it was carelessly and inaccurately taken, and I am not able to give accurate figures of the population at this time, but from all

sources of information at my command I believe a conservative estimate would be not less than 700,000, and the probabilities are that it is nearer 750,000.

The population is cosmopolitan in character. Every State and Territory is represented and many foreign countries, though the percentage of foreign born is not over 5 per cent.

According to statistics compiled in 1900, the percentage of illiteracy was but  $5\frac{1}{2}$  per cent, which is less than in three-fourths of the States in the Union.

The enumeration on which the above percentage is computed includes all Indians who have by Congressional act been granted citizenship. Eliminating the Indians, the true percentage of illiteracy would be reduced to about 2 per cent.

#### SUMMARY OF FISCAL YEAR ENDING JUNE 30, 1904.

Gratifying results have been attained by the tillers of the soil. Prosperity has attended the labors of the agriculturist. The field and garden have yielded bountifully, the prevailing natural conditions being favorable.

Live-stock interests have fared well, there being no troublesome infectious disease existing, and the mild winter permitted grazing upon the native grasses and wheat fields.

Farm property has increased in value during the year, according to the assessors' returns, \$3,463,007. The total assessed valuation of all property has increased \$6,474,601 over 1903.

Preparations are under way for the utilization of a portion of Oklahoma's share of the irrigation fund in the western part of the Territory, where the building of large dams for water storage is found practicable.

Our public highways have been the subject of much consideration, and the good-roads movement has induced considerable interest among our citizens.

Our banks, both national and Territorial, show a gratifying increase in the amount of deposits. They were at last report \$18,384,318.84, some 336 banks reporting.

Our public schools have had apportioned to them from the receipts of school-land leases the sum of \$220,177.85.

Our seven educational institutions under Territorial control report an enrollment of 3,426 for the past year. Additional buildings and facilities have been provided for the Central State Normal, at Edmond, and a science hall and library building for the university at Norman.

The only bonded indebtedness ever incurred by the Territory (\$48,000) has been paid off with accrued interest some twenty years before it was due.

Our public lands are being rapidly taken up and put under cultivation, some 1,500,000 acres having been filed upon during the past year.

Oklahoma has been the recipient of a large immigration from the older States, which has added much to our population.

Railroad building has progressed, several lines having been completed. Some 689 miles of new track and grade were built during the year. Many expensive and permanent improvements have been added to some of the older lines. The business of the railroads entering the Territory has been very satisfactory.



The prospecting for oil and gas in the eastern portion of the Territory has resulted in at least one instance of a good producer. Several other wells show favorable indications of oil in paying quantities.

Capital has sought investment in manufactories and various industries which give ample promise of fulfilling the hopes of the most sanguine. Several interurban electric lines have been projected, and some will doubtless be in operation before the end of the year.

By Congressional enactment the boundary lines of the Ponca, Otoe, Missouri, and Kaw reservations have been abolished and the territory comprising said reservations has been attached to and made a part of the counties of Kay, Pawnee, and Noble.

During the past year there have been appointed by the governor, 597 notaries public, 1 commissioner of deeds, and a fiscal agency in New York.

There have been 85 citizenship pardons issued, 1 death sentence commuted to life imprisonment, 1 conditional pardon, 4 commutations, and 1 parole from the penitentiary at Lansing. The sentence of one prisoner in a county jail was commuted.

Commissions have been issued to 34 members of the National Guard. Six Territorial officials have been appointed, and 4 county commissioners.

## PART II.

This section comprises miscellaneous subjects of general interest. Several papers have been prepared by persons peculiarly fitted because of their familiarity with the subjects treated.

Statehood.  
Oklahoma at the World's Fair.  
Geology and natural history.  
Irrigation in Oklahoma.  
Agricultural experiment station.  
Climate and crops.  
Agriculture.  
Irrigation and drainage.  
Live stock.  
Native trees and silviculture.  
Potato growing.  
Railways.  
Railways chartered.  
Commerce.  
Railway building.  
Manufacturing.  
Flour mills and elevators.  
Public highways.  
Sale of farm lands.  
Taxes.  
Property and taxation.

Penitentiary.  
Juvenile offenders.  
Apprehension of criminals.  
Insane.  
Oklahoma sanitarium.  
Deaf mutes.  
Public buildings.  
Oklahoma Historical Society.  
Newspapers published in Oklahoma.  
Investments, public and private credit.  
Mining.  
Undeveloped resources.  
Petroleum, oil, and natural gas.  
Labor supply.  
Oklahoma Bar Association.  
Telegraph and telephone companies.  
Building and loan associations.  
Insurance.  
Churches and fraternal societies.  
Chillico Agricultural School.

## STATEHOOD.

Oklahoma should have Statehood. It would be a matter of justice to grant it and a matter of injustice to longer withhold it. Seven hundred thousand citizens in this Territory are deprived of the rights of elective government. The people of Oklahoma have in the past demonstrated their capacity to govern themselves. For over one year in the early days the people were without organized government, yet they were a law unto themselves. The law-abiding instincts of the American citizen prevailed and crime and wrong-doing were rare

exceptions to the splendid orderly conduct of the people who laid the foundation of the Commonwealth of Oklahoma.

In No Man's Land, now Beaver County, the people lived for nearly ten years in a land without law, and absolutely free from the penalties of courts, yet society was pretty well protected and the rights of the residents generally respected. These conditions were typical illustrations of the sentiment for law and order which always has prevailed in Oklahoma. The people of this Territory have the moral qualifications that entitle them to Statehood.

From an educational standpoint they are eminently fitted for self-government. The Territory maintains seven educational institutions of higher learning. There are eight institutions of advanced learning in the Territory under control of individuals and benevolent institutions. There are common schools maintained in every neighborhood. We pay more for education than for all other public interests. The advancement in public improvements has been phenomenal. It is believed that in rapid development Oklahoma stands unrivaled. The valuation is about \$540,000,000, if everything is estimated at its real or cash value.

Then with 700,000 people, \$540,000,000 worth of property, the major portion of our public expenses bestowed upon our schools, unprecedented advancement along all lines of enterprise, it seems that Congress should give us the authority to exercise in full the rights of American citizens. The flag of our Republic will not be complete until upon its field of blue is placed the rising star of Oklahoma.

#### OKLAHOMA AT THE LOUISIANA PURCHASE EXPOSITION.

In 1901 the legislative assembly of Oklahoma appropriated the sum of \$20,000 to be used in placing an exhibit for the Territory at the World's Fair at St. Louis, Mo. The legislative assembly in 1903 made an additional appropriation of \$40,000. A State building was erected on the fair grounds which is very creditable to Oklahoma. Exhibits have been installed in the agricultural, horticultural, educational, and mining departments.

The Oklahoma exhibits have been a great surprise to the many people who have visited the World's Fair. Our agricultural and horticultural exhibits are especially fine. Other States have larger exhibits, but in variety and quality it is generally conceded that the agricultural and horticultural exhibits of Oklahoma are surpassed by none and equaled by but few States.

#### GEOLOGY AND NATURAL HISTORY.

[A. H. Van Vleet, Territorial geologist.]

Although other formations are represented, the so-called Red Beds occupy the greater part of Oklahoma.

The Carboniferous of Indian Territory extends westward into eastern Oklahoma. The surface rock of the western portion in many localities consists of Comanche Cretaceous or of Tertiary, while in the southwestern part the older rocks, consisting of porphyry, granite, and gabbro, have been pushed up above the general level of the Red Beds and form an extensive group of hills or peaks known as the "Wichita Mountains."



Each geological formation yields products peculiar to itself. With the Carboniferous are usually associated coal, gas, oil, and limestone; with the Red Beds of Permian, gypsum, salt, and sandstone, while the Wichita region furnishes granite, with a possibility of gold, silver, lead, copper, etc.

The Comanche Cretaceous, known as shell rock, is found in many localities, the most extensive areas, perhaps, being in Custer County. It yields no mineral products of commercial importance.

The Tertiary occupies in general the uplands of western Oklahoma. It consists for the most part of sand, clay, and gravel, arranged more or less indiscriminately. It is the action of water and wind upon this formation that has filled the beds of the streams with sand and formed the sand hills.

The water washes out the clay, silt, and fine sand, carrying them into the streams, while the coarser sand and gravel freed from the clay and silt have been formed into sand hills by the action of the wind. The Tertiary, where of sufficient thickness, furnishes an excellent water supply, and the "Tertiary springs" are of great importance in this formation.

The Carboniferous of Indian Territory extends into eastern Oklahoma, but the line of separation between it and the Permian has never been definitely drawn.

The great abundance of coal, oil, and gas found in this formation in Kansas and Indian Territory has naturally led to prospecting on quite an extensive scale to prove the existence of these products in Oklahoma. Many deep wells have been sunk and all of these have been found to contain either oil or gas, or both, but in most cases the quantity has not been sufficient to warrant further development.

The geological indications would place these products at a considerable depth in Oklahoma, too deep, in all but the extreme eastern portions, for commercial purposes; but in view of the many surprises in western development in these lines during the past few years, their presence in paying quantities is not an impossibility.

This formation yields an abundance of excellent limestone which furnishes the Territory with a building stone inexhaustible in supply and of superior quality.

The Wichita Mountains, because of their reported mineral wealth, have attracted more attention than any other portion of the Territory. The first accurate description of this region is contained in Marcy's report on the "Red River Expedition." It is evident that he believed the Wichitas contained the precious metals in paying quantities. This report, together with the Indian legends of rich hidden mines, has always made this region one of vast interest to prospectors.

Long before the "opening" of this section, prospectors, under various disguises, searched the mountains for "hidden mines" and "rich leads." When this country was opened for settlement, as was to be expected, prospectors swarmed into the mountains, and soon that whole country was staked off into claims.

So far results have been disappointing, but despite the fact that no mines have been opened that "pay," many of the miners are as enthusiastic as they were on the day of the opening, and are willing to spend their time and money in the development of what they believe to be a rich field.

The report of the Government expert, Mr. Bain, who recently



examined the region, was adverse to the mining prospects, but does not seem to have discouraged operations. The indications are that the mountains have been much overestimated in regard to their mineral wealth, but with our present knowledge we must simply place them in the list of "unproven territory."

The Red Beds or Permian is by far the most important formation in the Territory, as it is the origin of most of the soil, and supplies the salt, gypsum, clays, and much of the building stone, all of much economic importance.

The rock of this formation is mostly sandstone, varying in texture from a coarse rotten shale to a hard fine-grained sandstone. The better varieties make an excellent foundation stone, and because of its wide distribution is of great economic value.

The two products of the Red Beds that are, perhaps, of the most economic importance, and which promise much for future development, are its salt and gypsum.

#### SALT.

There are at least four salt regions of importance, the Salt Plains of the Cimarron in the saline reservation in Woodward County; the Salt Plains of the saline reservation in Woods County; the Salt Plains of Greer County, and the Salt Plains of Blaine County.

All of these have long been a source of local supply, but lack of fuel and transportation has prohibited development on a large scale. That these are the only drawbacks to profitable manufacture is abundantly proved by recent developments in Blaine County.

For years crude salt works have been in operation in this county. Their operations might be termed intermittent, depending upon the local demand and the supply of fuel, which was obtained from the black-jacks. The procuring of fuel was a difficult matter, owing to the precipitous nature of the roads leading out from the "gyp" canyons bordering the salt plain. When the Chicago, Rock Island and Pacific Railroad built through this region, giving means of procuring coal for fuel and shipping facilities for the salt, companies were formed for development on a large scale. Discouraging litigations followed for a time, but recently a strong company (the Oklahoma Salt Company) has been formed, and a plant has been installed, modern in every respect, lighted by electricity, with cement grainers in place of the old-fashioned steel or wooden pans, modern rakes, conveyers, elevators, and distributing machinery, a boiler capacity of 600 horsepower, and capable of an output of 450 barrels per day.

What has been accomplished here will be done in the other localities when shipping facilities are provided, and the salt industry will be one of the most important of the Territory.

#### GYPSUM.

Gypsum, in one form or another, enters so largely into the composition of many manufactured articles that it must now be regarded as one of the essential structural materials of the industrial world.

Its first use in the United States was principally as "land plaster." It is the rock from which is manufactured plaster board, stucco, plaster of Paris, hard-wall plasters, staff, wall finishes, etc., while large amounts are consumed in the manufacture of plate glass, Portland cement, terra cotta, pottery, paper, and fireproofing.

Report of the Governor of Oklahoma, 1904.

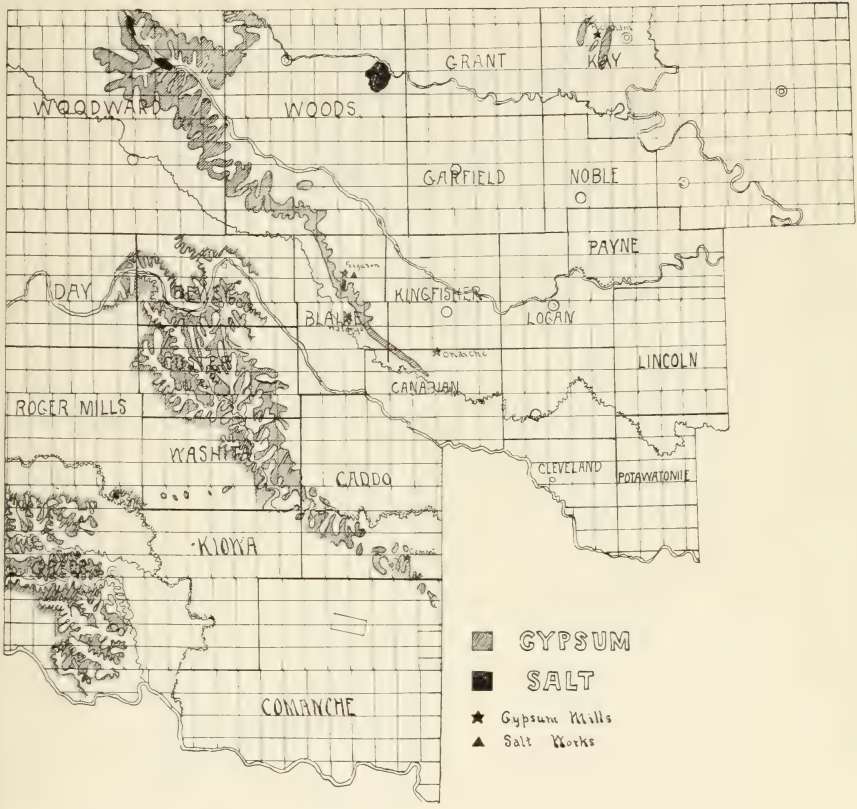
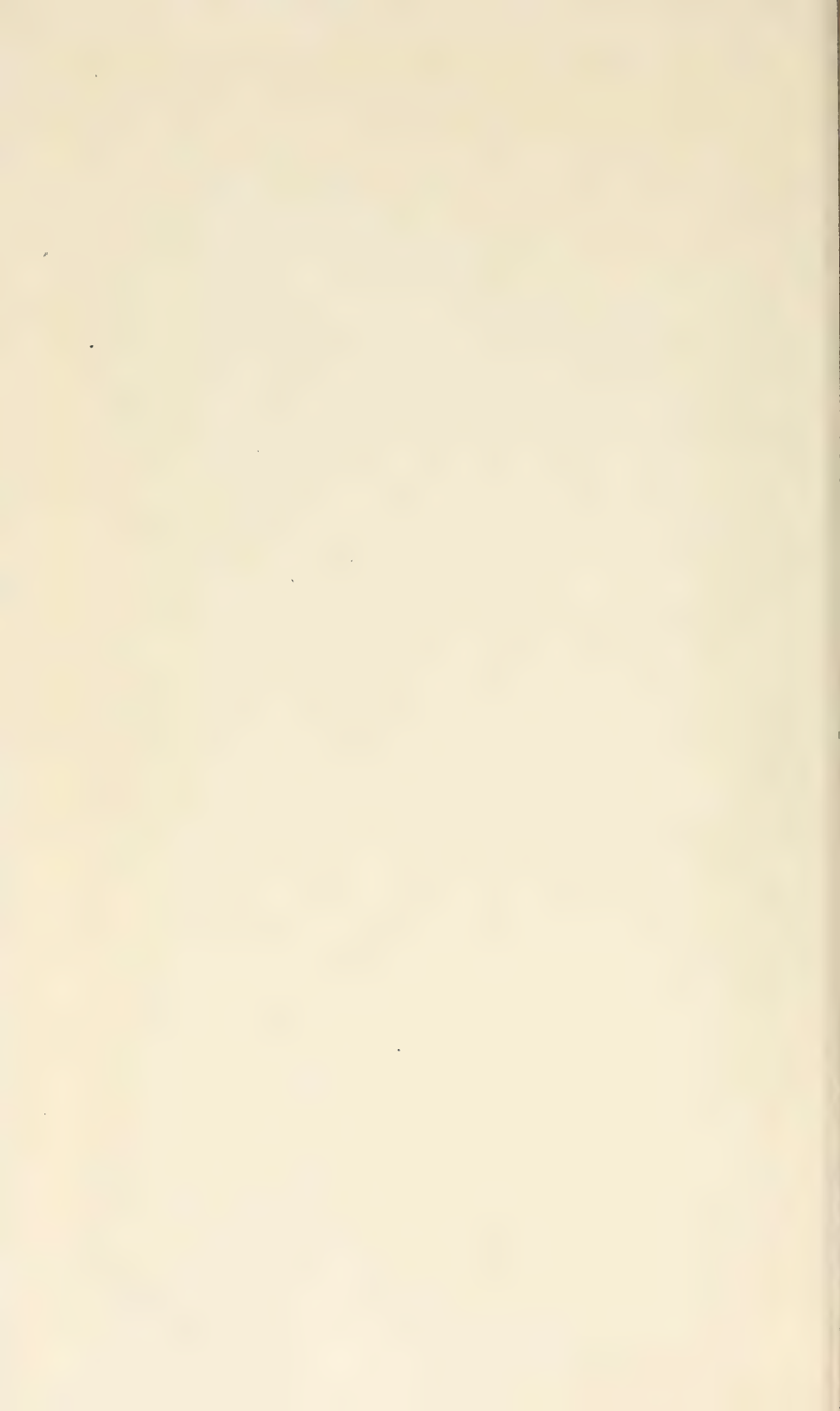


EXHIBIT E.

Prepared by A. H. Vanvleet, Territorial Geologist.





It did not come into general use in the manufacture of wall plaster until about fifteen years ago, and it is only during the past five years that its use has increased rapidly. In 1890 there were 182,995 tons sold; in 1898 this had increased to only 291,058 tons, while in 1903, 1,000,000 tons were sold. As there are 6,000,000 tons of wall plaster used annually in the United States, and as the gypsum plasters are now conceded to be equal if not superior to any others on the market, we may reasonably expect the consumption of gypsum to continue to increase rapidly. There is, therefore, at the present time much interest in the location of extensive gypsum deposits, and in the securing of favorable mill sites.

One of the most extensive gypsum deposits in the world extends from northern Kansas to Central Texas. Oklahoma occupies a central position in this region. Its supply of gypsum is almost inexhaustible.

In his report on the gypsum of Oklahoma, in the second biennial report of the Oklahoma Geological and Natural History Survey, Prof. Charles N. Gould has described the gypsum as occurring in four regions: (1) The Kay County region; (2) the main line of gypsum hills extending from Canadian County northwest through Kingfisher, Blaine, Woods, and Woodward counties to the Kansas line; (3) the second gypsum hills, parallel with the main gypsum hills, and from 50 to 70 miles farther southwest, which extends from the Keechi Hills in southeastern Caddo County northwestward through Washita, Custer, Dewey, and Day counties; (4) the Greer County region, occupying the greater part of western Greer County and the extreme southeastern part of Roger Mills County.

The following estimate, by counties, from the same report, will probably give a clearer notion of the location and extent of these deposits:

	Tons.
Canadian County.....	50,000,000
Kingfisher County.....	50,000,000
Blaine County.....	2,500,000,000
Woods County.....	14,000,000,000
Woodward County.....	24,000,000,000
Comanche County.....	200,000,000
Caddo County.....	3,000,000,000
Washita County.....	20,000,000,000
Custer County.....	6,000,000,000
Dewey County.....	1,000,000,000
Day County.....	500,000,000
Roger Mills County.....	1,000,000,000
Greer County.....	53,000,000,000

Total..... 125,800,000,000

Classified by regions, the amounts are:

Main line of gypsum hills.....	40,600,000,000
Second line of gypsum hills.....	31,200,000,000
Greer County region.....	54,000,000,000

Total..... 125,800,000,000

In this estimate the Kay County gypsums are omitted. These deposits are local and widely scattered, and no attempt has ever been made to estimate the amount of material in the locality.

With this enormous amount of gypsum actually in sight, means of transportation is the only thing lacking to make this region the center of the gypsum industry.

Mills are in operation at Peckham, Kay County; Okarche, Canadian County, and at Watonga and Ferguson, Blaine County.

Accurate statistics as to the total output are not at hand. The mill at Ferguson, which is owned by the United States Building Material Manufacturing Company, has a daily output of 120 tons.

The United States Gypsum Company has made extensive leases of territory and is already manufacturing gypsum products on a large scale.

One not well acquainted with this part of the Territory might infer that the great areas of gypsum would make it a poor farming country. Nothing could be further from the truth. The counties mentioned are among the most extensive in the Territory, and were previously noted for their extensive and rich pasture lands.

#### TIMBER AND GRASSES.

The native timber of Oklahoma consists of the usual western varieties—several varieties of oak, elm, ash, hackberry, hickory, pecan, cottonwood, willow, walnut, cedar, etc.

In the western portion of the Territory the timber is found, for the most part, skirting the streams. In the central, southern, and eastern portions there are quite extensive areas of timber of the varieties mentioned.

The so-called black jack covers a large part of the southeastern portion. This furnishes a fine quality of fuel, and the land when cleared is very fertile, this being the best cotton belt in the Territory.

An investigation of the native grasses has revealed a surprisingly large number of varieties. More than 100 are on record, and it is very probable that the list is not complete. Many of these make excellent pasturage and hay. It is this abundance of summer and winter pasturage, together with its mild climate, that has made Oklahoma famous as a stock country.

From its geological position Oklahoma must be regarded as primarily an agricultural country; but with an abundance of coal, oil, and gas just on her eastern border, and with its immense deposits of gypsum, salt, and building stone, it is one of the most favorably located districts in the whole west.

#### IRRIGATION IN OKLAHOMA.

[Gerard H. Matthes, district engineer, United States reclamation service.]

During the fiscal year ending June 30, 1904, surveys were made by engineers of the reclamation service of proposed projects in different parts of western Oklahoma. The localities visited include portions of Beaver, Woodward, Wood, Day, Washita, Greer, Roger Mills, Kiowa, and Comanche counties. Only one project worthy of consideration by the Federal Government has been encountered, including portions of Kiowa and Comanche counties. It contemplates the storage of the waters of Otter Creek, near the small town of Mountain Park, where the conditions are very favorable for the construction of a rock-fill dam about 75 feet high. The reservoir which would be so created would cover 4,275 acres, all of which is in private ownership and would store approximately 43,000 acre-feet of water. The land to be irrigated lies south of the dam site and covers portions of western



Kiowa and Comanche counties. The drawbacks to the project, as at present viewed, are: The cost of removing settlers from within the basis to be flooded; the removal and rebuilding of about  $4\frac{3}{4}$  miles of railroad track, and the doubt as to whether or not the available water supply will be sufficient to fill the reservoir every year.

In conjunction with the above project, surveys have been made for a reservoir on the North Fork of Red River, contemplating the construction of a dam 65 feet high at a suitable point near Lugert. This reservoir would flood about 3,800 acres and would extend up the river to within the neighborhood of Granite, Okla. Its capacity would be about 80,000 acre-feet. A canal survey was made from this reservoir in an easterly direction across the undulating country, tapping the flow of Elk Creek and emptying finally into the Otter Creek reservoir at its northern end. A large section of land lying below this canal line could be irrigated. Among the serious difficulties encountered is the sandy nature of the North Fork of Red River, which will tend to shorten the life of any reservoir constructed on this stream by rapid deposition of silt; the capacity of the reservoir is further limited by a low divide on the east side; an expensive tunnel through rock, about 3 miles long, will be required to draw the water from this reservoir.

It is estimated that approximately 110,000 acres could be irrigated from the two reservoirs, the estimate being based on a duty of water of 12 inches during the irrigating season, which it is believed will be sufficient to supplement the rainfall in order to produce crops. The project involves the construction of 25 miles of main canal, including 3 miles of tunnel from the reservoir on North Fork of Red River to the reservoir on Otter Creek. Also a canal about 27 miles in length from the Otter Creek reservoir to the irrigable lands.

A study of the topography of the west side of North Fork of Red River in Greer County reveals that it would be impossible to irrigate lands on that side of the river with water from the reservoir at Lugert, the land lying mostly too high for any diversion project.

The plans for these projects are as yet incomplete so far as information relating to stream flow is concerned. A study of the discharges of Otter Creek and the North Fork of Red River has been made based upon daily observations of the height of the water on gauges established in these streams near Mountain Park and Granite, respectively, and upon actual measurements of discharge made at intervals. The summer flow of these two streams is not sufficient to offset the evaporation from the reservoir surfaces, and the flood discharges must, therefore, be depended upon to fill the reservoirs. That these flood flows are exceedingly indefinite and variable quantities requires no comment. Not until sufficient data have been obtained concerning their magnitude and frequency, such as will satisfactorily establish the régime of these streams, can any definite conclusion be reached regarding the practicability of the projects, and any final recommendations to the Secretary of the Interior must be withheld until then.

The farmers of western Oklahoma are taking a more or less active interest in prospective irrigation schemes in their respective counties. From the many letters and requests for information received by the Department in Washington and by the district engineer stationed in Lawton, it can readily be judged that there is a desire on the part of many to see a portion of the reclamation fund placed to the credit of



Oklahoma Territory utilized for the construction of irrigation works by the Federal Government in the arid and semiarid portions of the Territory. So far as it has been practicable to do so information has been furnished to those requesting it regarding the provisions of the reclamation act, by correspondence as well as by personal interview and public addresses. An effort has been made to look into the nature of all proposed irrigation schemes brought to the attention of the district engineer, which seemed to warrant investigation. Surveys and investigations of this kind have lately been conducted in Beaver and Washita counties, but in most instances the projects have been found to be either impracticable owing to too great a cost involved, or to physical disqualifications, such as lack of proper foundations, too great a width at the dam site, the sandy and unreliable character of the stream, shortage of water, etc. The surveys made have further disclosed the fact that many of the projects, if developed, are such as would benefit a few individual farmers only, and could best and most economically be undertaken by the investment of a limited amount of private capital. Such small projects can hardly be considered to come within the scope of the reclamation act of June 17, 1902.

Generally speaking the topography of western Oklahoma presents few good opportunities for the storage of flood waters, there being a lack of natural dam sites. At a few points irrigation by the use of wind-mills and wells has been undertaken, and the results while necessarily of a limited character, have been satisfactory. The depth to underground water throughout western Oklahoma is variable and uncertain, and this method of irrigating can, therefore, be practiced in certain localities only.

Taking the above into consideration, and also the fact that the great majority of farmers in Oklahoma are not familiar with irrigation methods, coming as they did principally from adjoining States to the north, east, and south, it may be concluded that the possibility of raising crops by the artificial application of water in western Oklahoma is at this date by no means assured.

#### AGRICULTURAL EXPERIMENT STATION.

[John Fields, director.]

The work of the station during the year has been a direct development of that which has been in progress for several years. The growth of the Territory and its closer connection with Indian Territory has resulted in increased demands upon the station and prevented the extension of its work so as to cover many matters equal in importance to those now being investigated. Some of the experiments which have been in progress for several years are now about completed, and others are being taken up as the resources of the station will permit.

In the veterinary department the germ of hog cholera is being studied for the purpose of determining if it can be attenuated so as to be used to produce immunity. Immunity has been produced in rabbits and white rats by using cultures attenuated by growing at a high temperature, but it has not been found possible to produce the disease in pigs by using virulent cultures of the germ. It may be that the germ under ordinary conditions is not the cause of hog cholera. In connection with this the action of toxins filtered from cultures of various bacteria on the growth of the hog cholera is being studied.

Bacterial analyses of drinking water are being made. Samples were collected during the dry weather of the winter and again after the heavy spring rains for the purpose of ascertaining what per cent of wells show surface contamination.

The cultural characteristics of the tubercle-forming soil bacteria are being studied and experiments in inoculating soil for the growing of alfalfa and cowpeas have been started.

The manufacture and free distribution of vaccine for the prevention of blackleg in cattle has been continued, an appropriation for this purpose having been made by the last legislature. Abundant evidence has accumulated showing that the vaccine is entirely safe and effective in the hands of farmers. Unfortunately, many fail to avail themselves of this certain method of preventing losses from this disease. The use of vaccine, however, is quite general, and losses from blackleg are becoming less frequent.

The following are the lines of investigation in progress in the Agricultural Department:

A series of steer-feeding experiments was started in the winter of 1899-1900, and from 20 to 25 steers have been fattened every winter since then. These steers have been divided into lots of 5 each, and fed on different rations. The following feeds have been compared and used in different combinations: Shelled corn, corn meal, Kaffir meal, wheat meal, cotton seed, cotton-seed meal, alfalfa hay, Kaffir stover, prairie hay, wheat straw, and oats straw. All of these feeds and the rejected feed have been weighed and sampled as fed or collected and have been analyzed by the chemical department. The object of these feeding experiments has been to study different combinations of these feeds as to their efficiency and economy in producing gains. A bulletin, now in preparation, will report the results of three years' experiments comparing alfalfa with Kaffir stover and corn meal with Kaffir meal. The results of one experiment with cotton-seed products have been published in Bulletin No. 58. Other work with cotton-seed products is planned to be carried out during the winter of 1904-5. This will make three years' work with these and give fairly complete results. It will probably be necessary to discontinue steer-feeding work for a time after next winter so that more pressing work in horse, pig, and sheep feeding may be taken up.

For the past five winters from 20 to 25 yearling steers have been roughed through with the common roughage raised on the farm. This feed has been supplemented with cotton seed and cotton-seed meal. In the summer these steers were turned on pasture, and in the following fall were divided into lots and put into the experiment pens for fattening. The steers were weighed at regular intervals, and all of the feed given to them was weighed and recorded. This work has been done for the purpose of studying the individual gains and behavior of the steers before putting them into the fattening experiments, and of ascertaining in a general way the gains made and the feed required under such conditions.

Work in pig feeding has been carried on in connection with the steer feeding. Each lot of steers has been followed by hogs for the purpose of ascertaining the value as pig feed of the droppings from the different lots of steers. The study of the effect of cotton seed meal on pigs has been continued with the college swine herd.

Experiments have been started for the purpose of determining the



value of cotton seed meal and Kaffir corn products as feed for horses. These are being fed in comparison and in various combinations with common farm feeds. Different methods of preparing feed for horses will also be studied.

Field experiments with wheat include the following: Continuous culture on manured and unmanured soil, rotation with corn, oats, and cowpeas, manured and unmanured; rotation with castor beans, Kaffir corn, cotton, oats and soy beans, manured and unmanured; time of seeding; time of plowing; variety tests and seed selection, and pasturing to ascertain the effect on yield. The continuous culture and rotation experiments will continue indefinitely and reports will be issued at intervals. The experiments in time of plowing and time of seeding have been completed with the present season's work, and a bulletin summarizing the results for five years will be issued. Rye, emmer (speltz), barley, and oats are also being grown to determine their yields and adaptability to Oklahoma conditions.

Corn is being grown in rotation as indicated, and variety tests are being made for the purpose of determining the value of different varieties when grown here.

Kaffir corn is grown in rotation and continuously on manured and unmanured soil. The improvement of Kaffir corn by breeding and seed selection has been taken up, and its yields and characteristics are being compared with Jerusalem corn and milo maize.

Cotton is being grown in rotation and variety tests are being made. A small gin has been purchased so that this work may be conducted more satisfactorily than heretofore.

Forage crops—such as sorghum, cowpeas, soy beans, rye, oats, rape, and wheat—are grown and pastured by hogs, full records being kept. Variety tests of cowpeas and field trials of soy beans are also being made. Variety tests of peanuts and stock beets are being continued.

Experiments in seeding alfalfa on bottom and upland soils have been in progress for several years and notes are kept on the growth and yield of various fields of alfalfa. Methods of getting a stand of Bermuda grass on upland soils are being studied.

The horticultural department is carrying on twenty-five distinct lines of investigation. In many cases the same plants and plants are being used in more than one experiment. Fifteen of these experiments are variety tests and for that reason are continuous in their nature. The plan is to cut down the number of varieties in each test as rapidly as possible and arrange to continue the tests on a small scale only. These tests have been in progress for several years and include the following: Almonds, apples, apricots, blackberries, cherries, currants, dewberries, grapes, peaches, pears, plums, quinces, raspberries, and strawberries.

An experiment in methods of cultivating, pruning, and training grapes is well started, and the vines will bear their first full crop this year. It will be at least three years before any definite conclusion can be drawn from this experiment. An experiment in methods of cultivating and pruning blackberries has been discontinued because of blackberry rust, which destroyed a large number of plants. Some results were secured and observations along this line are being continued.

An experiment in apple orchard cultivation has been extended to include the growing of cover crops, and will be completed in two more



years. This experiment is for the purpose of determining the relative merits of different methods of cultivation and the effect of growing early crops and fall cover crops in the orchard. A study of the cause and effect of wooly root of the apple has been in progress for three years, but there are few indications that the work will bring to light the cause of the trouble. The effect of grafting and top-working trees is being studied for the purpose of determining the effect of grafting weak-growing trees in the tops of strong-growing trees. Spraying for the prevention of the codlin moth, using different insecticides and different methods of applying them, is being carried on. The effect of fertilizers on the yield of tomatoes and on the relative weight of seed pulp and solid fruit is being determined for the second year. Different varieties of beans and methods of cultivation are being tested. A variety test of ornamental hedge plants has been started for the purpose of finding desirable hedges for this climate, the privet having been seriously damaged by disease. A test of the relative merit of different varieties and species of grapes, when used as stock for grafting, is being made.

The native fruit-bearing plants of the Territory are being studied and are being collected and planted as they can be secured. The purpose of this work is to determine the value of these native fruits as a starting point in developing varieties better adapted to our conditions than imported varieties.

The department of botany is studying castor beans for the purpose of determining the relative value of the different varieties for purposes of breeding and improvement. This work has been in progress for three seasons. Little was accomplished last year because of damage to the plants by the false chinch bug. Of about 40 sorts of castor beans used in this work, 20 have been eliminated. The collection of native grasses and plants is being continued as opportunity arises and it is hoped in time to cover the whole Territory. Entomological work has also been done as the occasion arose, chiefly in connection with the Hessian fly which appeared in a few localities, but which has not yet done much damage.

The department of chemistry has made the fodder analyses of samples from the feeding experiments and determined the moisture in the soil samples from the field experiments of the agricultural department. As opportunity arose work was continued on the study of the composition of red and white Kafir corn as compared with Indian corn. Analyses of waters for the purpose of determining their fitness for irrigation are made without charge when sampled in accordance with directions which are furnished to all applicants.

The following bulletins were issued during the year:

No. 59, September, 1903. Reprints from Bulletins No. 47, 50, and 52, and annual reports 8 to 11. This volume of reprints was made necessary by the repeated requests of new settlers for information contained in publications of the station which were out of print. It contains nothing which, in some form or other, had not been sent to all of the addresses on the mailing list and was sent only to those who requested it.

No. 60, December, 1903. Planting trees for posts, fuel, and wind-breaks. A report of the results of experiments in tree planting made at the station and of observations of the results secured on farms in different portions of the Territory.

No. 61, January, 1904. Field experiments. A report of the results of experiments covering several years with sugar beets and mangels grown for stock feed, Kafir corn and Indian corn grown on upland soil, and oats.

No. 62, May, 1904. Disinfecting power of coal-tar dips. A report of the results of laboratory tests of Car-Cul, Chloro-Naphtholeum, Creoline, Creolin-Pearson, Lincoln Dip, Moore's Hog Remedy, and Zenoleum, and of Mortipest and kerosene emulsion.

No. 63, May, 1904. Tuberculosis in hogs. A report of experiments in the transmission of tuberculosis to hogs by feeding them milk from tuberculous cows.

Press Bulletins Nos. 98 to 109. These were issued monthly and contained timely notes of the results of the station's work. They will be reprinted in the annual report of the station, which is now in press.

The mailing list of the station continues increasing at a rate which makes it impossible to supply copies of bulletins to all who ask for them after they have been sent to the regular mailing list. The mailing list now contains 19,289 names. In addition to this is the official mailing list furnished by the Office of Experiment Stations of the United States Department of Agriculture, making 21,000 copies of each publication necessary to supply the regular list. About 500 requests for bulletins are received each month.

The usefulness of the station, through the medium of correspondence, is constantly increasing. This is one of the most important means of bringing the work of the station close to the every-day life of the farm and of keeping the members of the staff in close touch with conditions in remote parts of the Territory. All questions are promptly and carefully answered and, when possible, bulletins covering the subject-matter of the inquiry are sent so that more complete information than can be given by letter may be supplied.

The station cooperated with the board of agriculture in the work of farmers' institutes by sending one or more members of its staff to each of the annual meetings of the county institutes, with two exceptions. Members of the station staff were present at three other farmers' institutes and acted as judges of live stock at four county fairs. It is of great importance that station workers have an opportunity to attend these meetings so that they may present the results of the station's experiments and gather much of practical value from the other speakers and from the discussions. To an unusual degree the farmers of the Territory study the results of the experiments made at the station and apply the results to their own operations.

#### CLIMATE AND CROPS.

[C. M. Strong, section director.]

#### SYNOPSIS OF WEATHER CONDITIONS FOR OKLAHOMA AND INDIAN TERRITORIES FOR THE YEAR ENDING JUNE, 1904.

*July.*—Temperature and precipitation conditions were favorable during the first two weeks and at the close of the month; during the intervening period a droughty condition and heat caused all crops to suffer. Cultivation of crops and plowing for wheat progressed at intervals, being delayed by hard ground. Corn, generally, made a fair growth, earing out well, and maintaining its condition despite the drought. Over the western portion of the section the insufficient rainfall and heat caused corn to deteriorate in condition and shortened it from a fair to a half crop prospect. The early corn was nearly made and the late was filling well where rain fell. Cotton improved rapidly in condition; the plant squared, bloomed and fruited well, and was in a fair to good condition, though small and late. Barley, millet, alfalfa, hay, potatoes, and

AVERAGE ANNUAL TEMPERATURE, 1891 TO 1903, INCL.

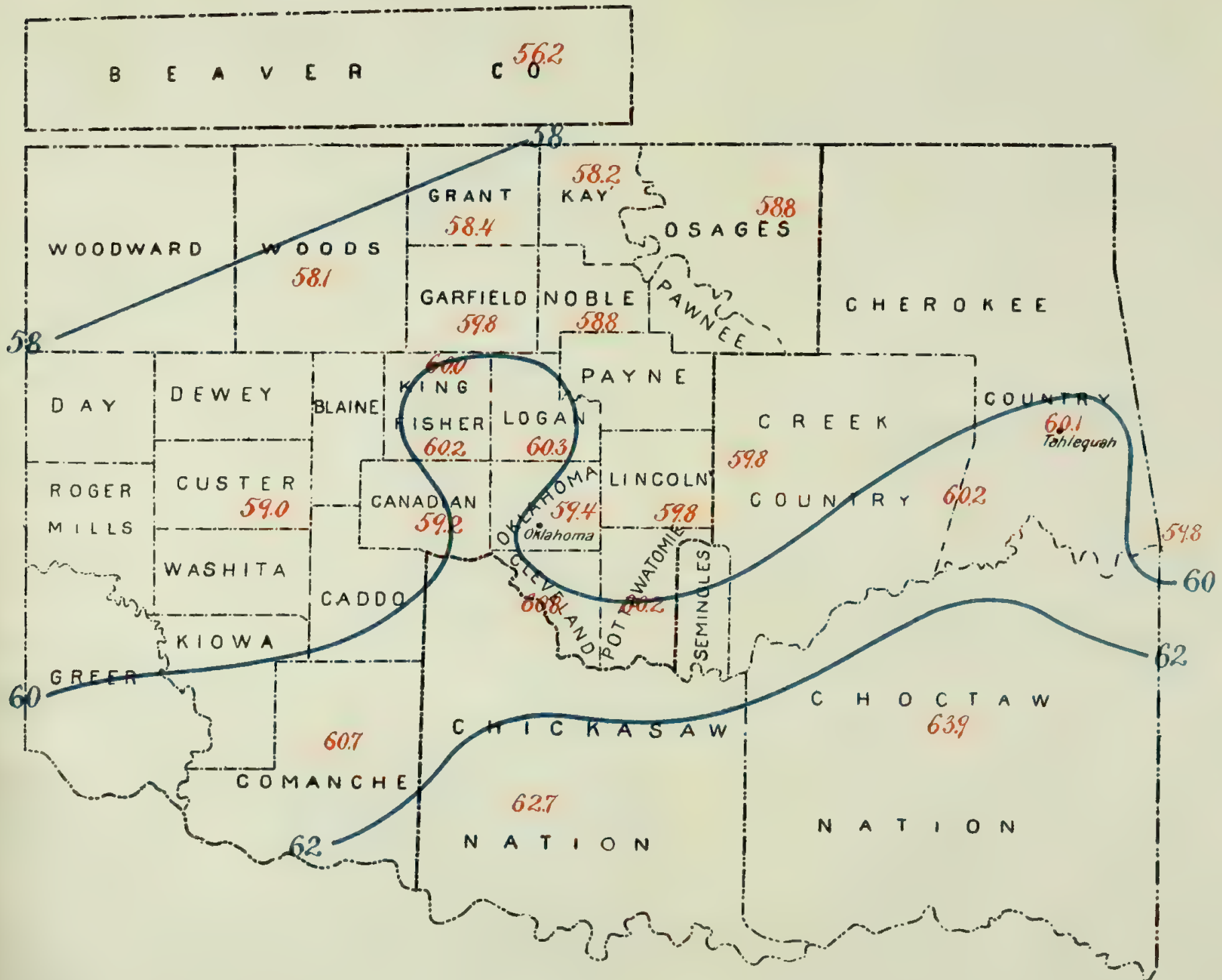


Exhibit A.





fruit were secured with fair to good yields. Cantaloupes and melons ripened and, with fruit, were being shipped. Wheat and oat harvesting were completed, and thrashing continued during the month, with fair to good yields of wheat, and poor to fair yields of oats.

*August.*—Temperature and precipitation conditions were unfavorable until the 9th, when showers set in and permitted the progress of fall plowing, which was rapidly advanced. Early corn matured well and cutting was in general progress with fair to good yields; late corn was benefited by the rains and was maturing and filling well; over some western counties late corn was damaged by drought. Cotton was greatly improved by the conditions; the plant made a rapid growth, formed, fruited well, and was well balled; some early cotton was opened and being picked; the crop was in a fair to good condition, but about two weeks late. Broom corn matured and was being harvested with fair yields. June corn, cane, Kafir corn, castor beans, turnips, and late potatoes were doing well and in fair condition. Sweet potatoes were maturing and some being secured, with fair yields. Haying continued with good yields of a fine quality secured. Melons, peaches, pears, plums, apples, and grapes matured in good condition, and were giving fair to good yields.

*September.*—Temperature and precipitation were deficient, but the rains were fairly well distributed, and plowing and wheat seeding were well advanced by the close of the month. Wheat seeding was delayed some, but is nearing completion over some counties, with early sown wheat up to a fair stand; rye seeding continued, with early sown doing well. Cotton generally did well, but made slow progress in opening, and but a small proportion of the crop had been picked by the close of the month. Over some localities heavy rains caused some damage to the crop; over others, sharpshooters, boll-worms, shedding, and rust were damaging the crop; the first bales were generally marketed by the 14th; the cotton secured is a good color and staple. Hay, broom-corn, cane, and Kafir-corn harvests continued, with good yields reported. June corn, castor beans, turnips, and late potatoes did well. Late fruit was being secured, with apples giving a good and peaches poor to fair yields.

*October.*—Temperature and precipitation averaged nearly normal during the month over the section. The cool periods from the 13th to 18th, and 22d to 24th, inclusive, caused light to heavy frosts over all portions, which were beneficial through causing cotton to open more rapidly, but were damaging to late potatoes and bottom-land vegetation. The precipitation was poorly distributed over the section, being excessive over the eastern and deficient over the western division. As a result the cotton crop was damaged in localities over the Indian Territory by excessive rains, and picking was greatly retarded, while over western Oklahoma deficient precipitation caused the wheat in the ground to make slow growth or not to develop from the seed, and delayed the progress of plowing and seeding. Wheat seeding was nearing completion and the early sown was coming up to a good stand, and, over some counties, being pastured. The crop was generally in fair condition and doing well. The rains at the close of the month were very beneficial. Cotton picking progressed under favorable conditions, and it is probable that half the crop has been secured. The general yields have been light to fair, and that gathered was of a good staple and color. Corn, Kafir corn, castor beans, sweet and Irish potatoes, cane, millet, and apples were being gathered with fair to good yields. Pasturage continued good, but was becoming short and dry in localities, and stock were generally doing well.

*November.*—The month was marked by a cold wave lasting from the 16th to 20th, which caused a rapid fall in the temperature and severe cold, and by its deficiency in precipitation, only one previous November having a less amount recorded. Over the counties south of Woods and Woodward no precipitation of amount occurred, and as a consequence the late-planted wheat and rye did not come up, and over many localities that up is reported in a dying condition or badly damaged; seeding of wheat was also delayed and much ground remains to be planted. The early-sown wheat is still in fair condition but making slow growth and needing rain. Over central and eastern Oklahoma the early wheat is in good condition and looking well, with moisture plentiful; the late-sown wheat is coming up and making slow growth. Over the Indian Territory the conditions are generally too dry for wheat, but the crop is still doing well. Cotton picking progressed and the bulk of the crop was secured with poor to fair yields of a good to fine quality reported; the late cotton was damaged by the freeze and much of it will not develop. Corn husking and potato digging progressed, with poor to fair yields. Fall plowing continued in general progress, with ground in fair condition. Stock is generally doing well and is in fair condition.

*December.*—Daily temperatures averaged below the normal until the 16th, with a cold wave on the 12th and 13th; and above the normal the remainder of the month, with warmest on the 31st. The precipitation that occurred was poorly distributed over the section, there being an entire lack over the western, and a slight excess

over the far eastern localities; taken as a whole, the precipitation for the month was one of the smallest for December on record, and the drought condition over the western portion of the section was greatly intensified. The moderate rains over the middle and eastern divisions on the 23d and 24th were very beneficial to the growing crops and generally relieved the drought conditions over those divisions. Wheat, generally, has made but a slight growth and is small, but in good condition and looking well, except over the central western counties, where the greater portion is still unsprouted. The recent rains brought a large portion of the late wheat up to a fair stand. The wheat is too short for pasturage, and none is available. The Hessian fly is causing damage to the crop over Kay County and portions of the Cherokee Nation. Wheat seeding progressed at intervals and is nearing completion. Cotton picking and corn husking were about completed, with fair to good yields. Plowing for spring crops was in general progress, with the ground in good condition. Stock were generally doing well and in good condition, but were mostly being fed, with water scarce in some localities.

*January.*—Daily temperatures averaged below the normal from the 2d to the 6th and from the 21st to the 29th, inclusive, with cold waves on the 2d, 21st, and 25th, the coldest for the month being near zero on the 26th. It was rather warm on the 18th and 19th. Precipitation occurred generally on the 20th, 21st, and 22d, and occurred in the form of rain, sleet, and snow, being generally beneficial to the crops in the ground and placing the soil in good condition for plowing and seeding. Wheat made but little headway during the month until the 20th, when the rain, sleet, and snow benefited the crop very materially; it continues small, but since the rains looks healthy and is still alive, and is in a fair to good condition except over the northwestern counties and the greater portion of the Indian Territory, where the crop is in poor condition. Hessian fly is causing damage to the wheat in Kay County. Wheat affords very little pasturage. Some cotton remains in the fields in localities and is still to be gathered. Plowing for spring crops is progressing rapidly and is well advanced, the ground being in excellent condition. Stock is doing well, is in good condition, and wintering well, though feed is scarce in some localities. Fruit buds are reported to be unharmed.

*February.*—Cold waves reduced the temperature below the normal from the 7th to 11th, and 15th to 21st, but caused no damage to the crops in the ground beyond retardation of growth. Warm waves from the 1st to 6th, 12th to 14th, and 22d to 29th caused the temperature to range much above the average. The month was remarkable for excess in temperature and deficiency in precipitation, being one of the warmest and having the least amount of precipitation on record for February. Despite the great deficiency in precipitation the crops in the ground continued to hold their own, except over a few localities, and the subsoil moisture was still plentiful, owing to the heavy rains of the preceding month. Wheat made but a slight growth, and ranges from a poor to good condition, owing to locality, the general average being fair; the plant is small, well rooted, and greening up generally within the last week of the month. The ground is reported dried out to a depth of 3 or 4 inches, but below that depth is moist. It is believed that abundant precipitation within the next two weeks will place the crop in good condition. The ground is in fine condition for cultivation and is being prepared for corn and cotton, with a large increase in acreage reported. The oat ground is prepared and much of the crop has been sown, but many fields are being held until rain occurs. Early potatoes and gardens are being planted and gardens prepared for later crops. Fruit trees are budding out and are generally in good condition; the trees are more advanced over Oklahoma than over the Indian Territory. Stock continues to do well, and though thin, is standing the winter in fair condition; feed is becoming scarce, owing to the shortage in wheat pasturage. Good rains are now needed to advance the growth of the crops in the ground and to place the soil in proper condition for seeding.

*March.*—Cold waves reduced the temperature below the normal on the 3d, 4th, 26th, 27th, and 28th, the freezing temperatures accompanying the latter causing great damage to the early varieties of fruit in blossom and some retardation of growth to the crops in the ground. Warm waves prevailed the remainder of the month, causing the temperature to range decidedly above the normal for the month and making the month the warmest March on record. Drought conditions continued unbroken over Oklahoma until the 24th, when general showers were very beneficial. Over the Indian Territory rains were general, and work was retarded over some localities by wet, cold condition of the ground. Wheat over the Indian Territory was greatly benefited by the showers at the close of the month and was in a good growing condition. Over Oklahoma wheat continues in fair condition northward of Logan County, but elsewhere deteriorated from the effects of the high, dry winds, which blew the plant out on loose, sandy soils. Over the western counties the crop is in poor condition and the prospect is for a half yield or less; much will be plowed up



B E A V E R C O

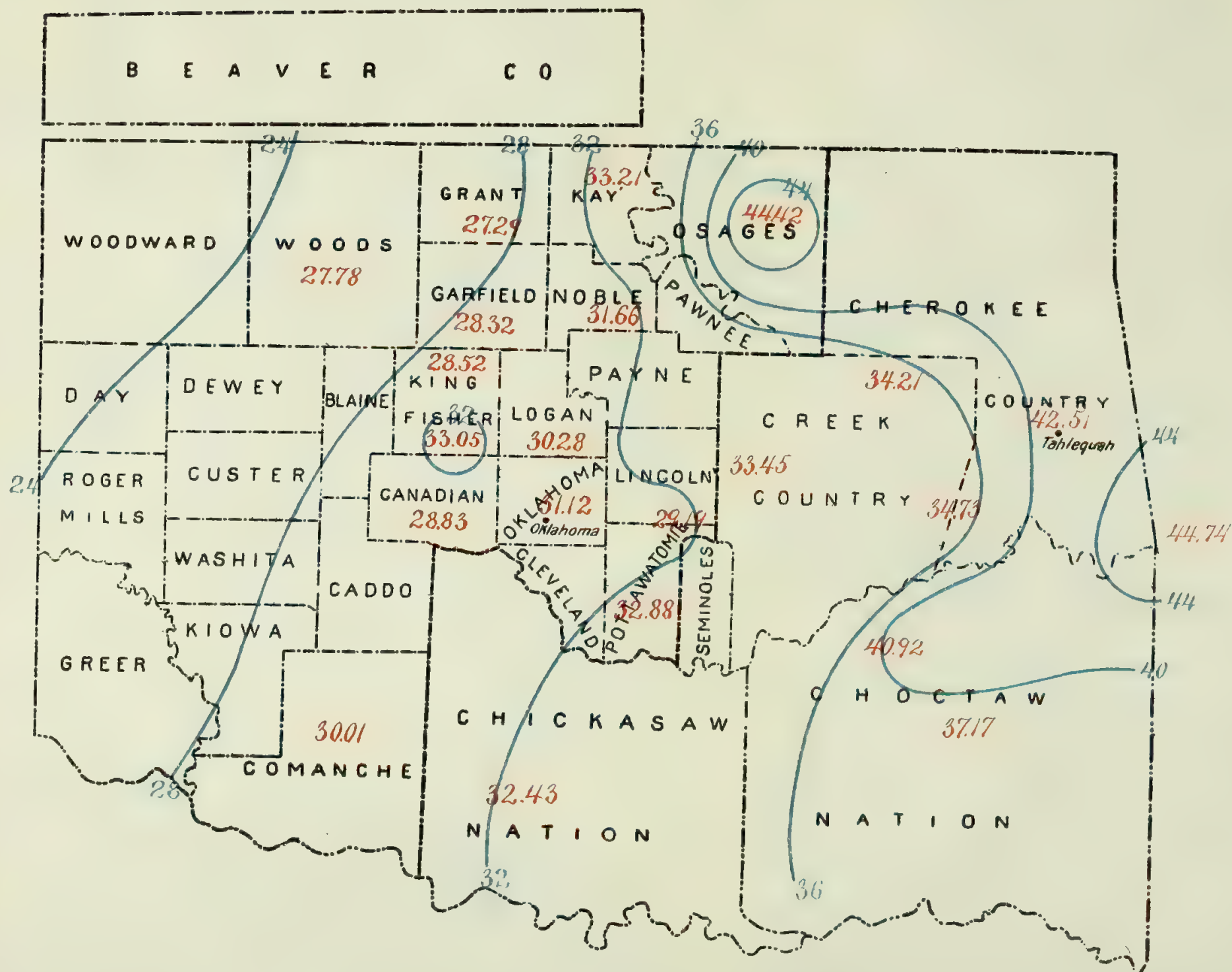


Exhibit B.



and the ground placed in other crops. The recent rains over western Oklahoma were beneficial, but much more is needed to develop the plant. Oat seeding is well advanced and the early sown is up to a good stand over the Indian Territory and a fair to poor stand over Oklahoma. Corn planting is progressing and the work is well advanced. Early potatoes and garden truck are planted and coming up. Apricots, peaches, cherries, and plums blossomed and were in good condition until the recent freeze, which badly damaged or killed them over nearly all portions of Oklahoma. Not much damage was done over the Indian Territory to the fruit. Cotton ground is generally being prepared, with an increased acreage. Alfalfa is generally doing well, and range grass is starting up and making a fair growth. Stock is in good condition, except over a few localities, where grass is backward and water scarce.

*April* was marked by continued cool weather and below normal precipitation. Those conditions proved very unfavorable to the crops in the ground, retarding their growth and proper development and causing a general decline in the condition of the cereals. The general rains that occurred were very beneficial to the crops in the ground and placed the ground in good order for the planting of corn, cotton, and other crops, but came too late to materially benefit the wheat crop over the central and western portions. Wheat made a fair growth and was in fair condition over the Indian Territory and the northern portion of Oklahoma, but over central, southern, and western Oklahoma the crop made poor growth, was heading out very short, and was thin on the ground. Over many counties in the central and western divisions large areas were plowed up and placed to other crops. Oats, generally, over the section were uneven in stand and were in poor condition. The late-planted oats were much benefited by the rains of the latter portion of the month and were in an improved condition. Corn planting progressed under favorable conditions, and the early-planted corn came up to a fair stand and was cultivated the first time; the later-planted corn came up unevenly and much of it will be replanted. Corn made a slow growth, owing to the continued cool weather. Cotton planting was well advanced, with the early-planted cotton coming up to a fair stand but making a slow growth. Work was delayed, over localities, in the Indian Territory by heavy local rains. A large increase in acreage was reported from all portions. Early potatoes and garden vegetables made a fair growth and were in good condition. Vegetables were being marketed at the close of the month. Alfalfa and range grass made a fair growth, and stock improved and were fattening up. Kaffir corn, cane, millet, castor beans, and broom corn were being planted. Frosts caused considerable damage to the fruit over the Indian Territory and much damage over Oklahoma. The prospect was for a fair yield over the southern and central portions of the Indian Territory, and a poor yield over Oklahoma.

*May* was marked by almost daily precipitation, largely local, and at times heavy and torrential in character; moderately warm day and continued cool night temperatures, and by severe hailstorms on the 25th and 26th over Lincoln, Logan, and Oklahoma counties, and the Creek and Choctaw nations. The growing crops and fruit were ruined in the hail belts, and the accompanying high winds caused considerable loss to property. Wheat benefited largely from the prevailing conditions and made a decided improvement in condition and growth over the section. The plant headed out well and was maturing by the close of the month. The prospect was for a half yield or better over the eastern and central portions, but over the western portion, owing to a thin stand, the prospect was for a third to half of an average yield. Oats were greatly benefited by the rains, but the stand was uneven and irregular, and ranged from a good condition over the eastern portion to a poor condition over the western portion. Owing to the continued cool nights the plant made a slow growth and headed out poorly, and the prospect was for a poor to a fair yield. Corn planting continued and was completed during the last week of the month. The crop was generally up to a fair to good stand, was fairly well cultivated and some was being laid by. The plant made a slow growth, owing to cool nights, but was in a good condition. Cotton planting advanced and was completed, with ground in good condition. The crop came up to a good stand, was being chopped out and cultivated, and was in a good state of cultivation and promising at the close of the month. Some replanting was done, owing to cool nights and hail damage. The plant growth was slow and warmth and fair weather was needed to advance the plant to proper condition. Early potatoes, garden vegetables, and strawberries matured and were being dug or secured with good yields reported. Potatoes were in a fair condition over the eastern and central portions, and poor to fair condition over the western portion. Kaffir and broom corn, cane, millet, castor beans, milo maize, and sweet potatoes were planted, came up to good stands, and made good growth. The acreage of broom corn was largely increased over the western portion of the section. Fruit continued to do well, but dropped off badly over some localities. The prospect continues for a fair yield over the Indian Territory and a poor



yield over Oklahoma. Grapes and blackberries promise a large yield over nearly all portions. Grass, meadows, and alfalfa made a rapid growth, and the first cutting of alfalfa was being secured with a good yield. Meadows promise a large yield of hay. Stock were fattening up rapidly on range grass and are in a good condition.

June was marked by having the heaviest precipitation on record, for the month, for the past fourteen years. Two periods of almost continuous precipitation occurred, lasting from the 1st to the 10th and from the 19th to the 30th, inclusive. The local storm areas were marked by heavy and excessive downpours, the heaviest centering over Canadian and Comanche counties, Oklahoma, and the Creek and Choctaw nations, Indian Territory. Over those portions precipitation ranged from 13 to 16½ inches during the month. Precipitation was very unevenly distributed over the section for within a short distance of the localities having excessive amounts; other localities received only the average or below average precipitation. This was especially marked over Oklahoma. Over the Indian Territory the distribution was more uniform. The first storm period was marked by tornadoes and hail belts developing over Oklahoma and the Indian Territory, by destructive overflow of streams and high winds, which caused much damage to property and crops, and some loss of life. Wheat matured and by the close of the month was nearly harvested, except over the Cherokee Nation, where continued rains delayed work. The greater portion of the crop was shocked in good condition, and thrashing was in progress with yields ranging from very poor to good, but of a good quality of grain. Oats headed and matured and harvesting was in progress with light to fair yields of a fair quality. Some fields were rusted or very weedy. Corn made a fair to good growth, was mostly laid by in fair condition, and was silking and tasseling out by the close of the month, with prospect for an excellent yield. Cotton made a slow growth, was very weedy, and was considerably damaged by rains over the Indian Territory during the first half of the month; during the last half, under the influence of increased sunshine and warmth, the plant made a rapid growth, was squaring and blooming out, while cultivation, cleaning, and chopping progressed over nearly all localities, placing the crop in good condition by the close of the month. Potato digging progressed and was nearly completed, with fair to good yields, except over some localities in the Indian Territory, where they rotted badly and gave a poor yield. The ground was being prepared for the second crop. Kaffir and broom corn, cane, millet, milo maize and castor beans made good growth and were in fine condition. Alfalfa made good growth. The first cutting was completed with a good yield. Meadows were in fine condition and haying was making slow progress, with good yields reported. Range grass was good and stock was in fine condition. Fruit continued to do well and was ripening. Early peaches were rotting, but blackberries and apples were promising fair to abundant yields.

*Killing frosts in 1903.*

[Last in spring and first in autumn.]

Stations.	Last of spring.	First of autumn.	Stations.	Last of spring.	First of autumn.
Arapaho.....	May 1		Kingfisher.....	May 1	Oct. 18
Ardmore.....	...do	Oct. 18	Mangum.....	...do	Nov. 16
Beaver.....	Apr. 30	Oct. 16	Marlow.....	...do	Nov. 17
Blackburn.....	May 3		McComb.....	...do	Oct. 18
Binger.....		Oct. 18	Meeker.....	...do	Oct. 19
Busch.....	May 1		Muskogee.....	...do	Oct. 18
Chickasha.....	...do	Oct. 18	Newkirk.....	Apr. 30	Sept. 27
Cleo.....	May 3		Norman.....	May 1	
Chandler.....	May 1	Oct. 24	Oklahoma.....	Apr. 30	Nov. 16
Cloud Chief.....	Apr. 30	Oct. 22	Okmulgee.....		Oct. 18
Durant.....	May 1	Nov. 17	Pawhuska.....	May 1	Oct. 8
Eldorado.....		Oct. 18	Pauls Valley.....	May 2	Oct. 18
Enid.....	Mar. 29	Nov. —	Perry.....	May 1	Nov. 17
Fairland.....	May 3	Oct. 18	Ravia.....	...do	Do.
Fort Reno.....	May 1	Nov. 16	Rolf.....		Oct. 24
Fort Sill.....	...do	Oct. 17	Sac and Fox Agency.....	May 1	Do.
Fort Smith, Ark.....	Mar. 24	Nov. 17	Shawnee.....	...do	Nov. 17
Goodwater.....	May 1	Oct. 18	South McAlester.....		Do.
Grand.....		Oct. 5	Stillwater.....	May 1	Do.
Guthrie.....	Mar. 28	Nov. 17	Tahlequah.....	...do	Do.
Hartshorne.....	May 1	Oct. 18	Tuloga.....	Apr. 30	Oct. 18
Heddlton.....	...do	Oct. 24	Temple.....	May 1	Do.
Hennessey.....	...do	...do	Wagoner.....		Do.
Hobart.....	Apr. 30	...do	Waukomis.....	May 1	Nov. 14
Holdenville.....	Apr. 15	Nov. 17	Weatherford.....	...do	Nov. 11
Jefferson.....	May 1		Webbers Falls.....		Oct. 18
Jenkins.....	Apr. 30	Oct. 23	Woodward.....		Oct. 23
Kenton.....	...do	Sept. 17			

TOTAL PRECIPITATION FOR YEAR 1903.

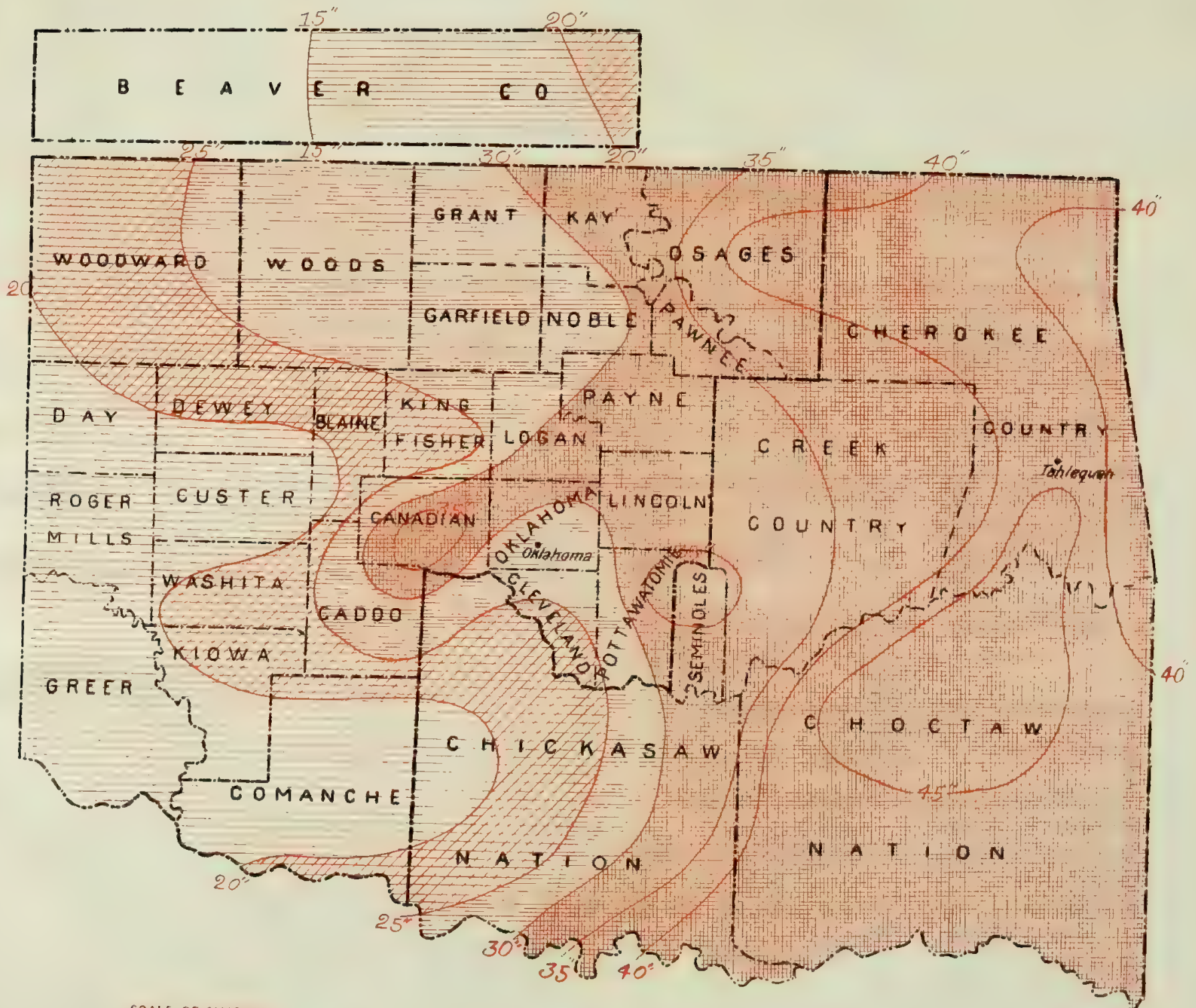


Exhibit C.





MEAN ISOTHERMS AND PREVAILING WINDS FOR YEAR 1903.

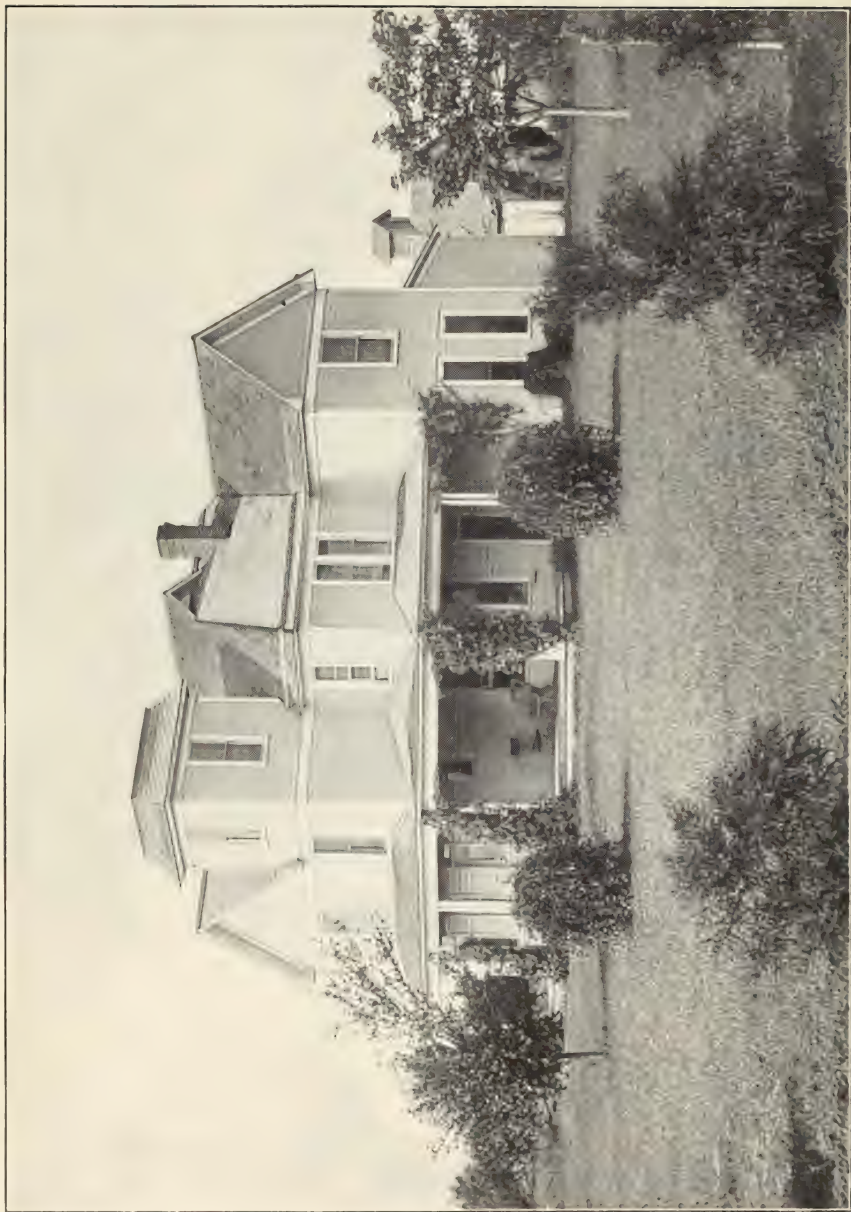


Exhibit D.

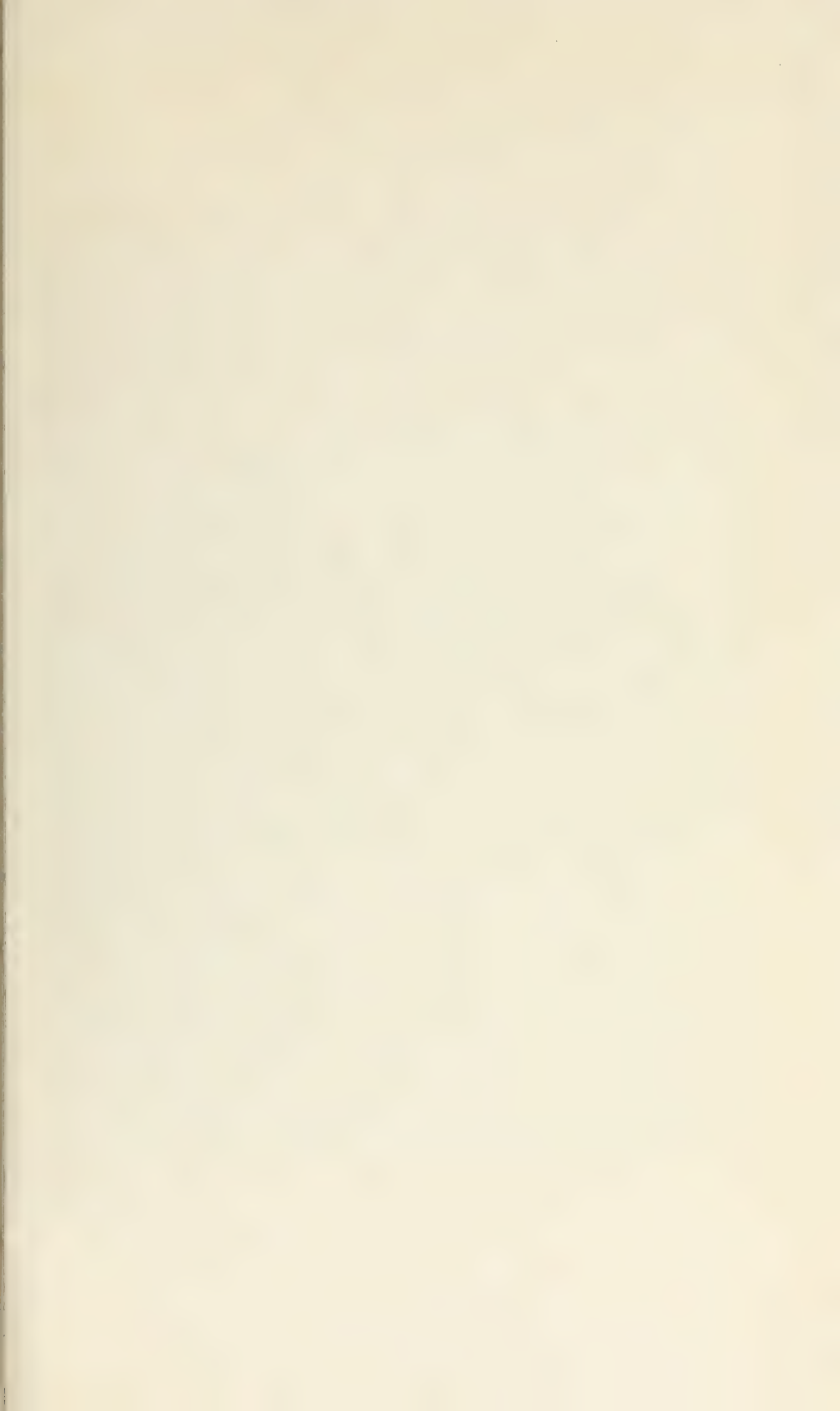
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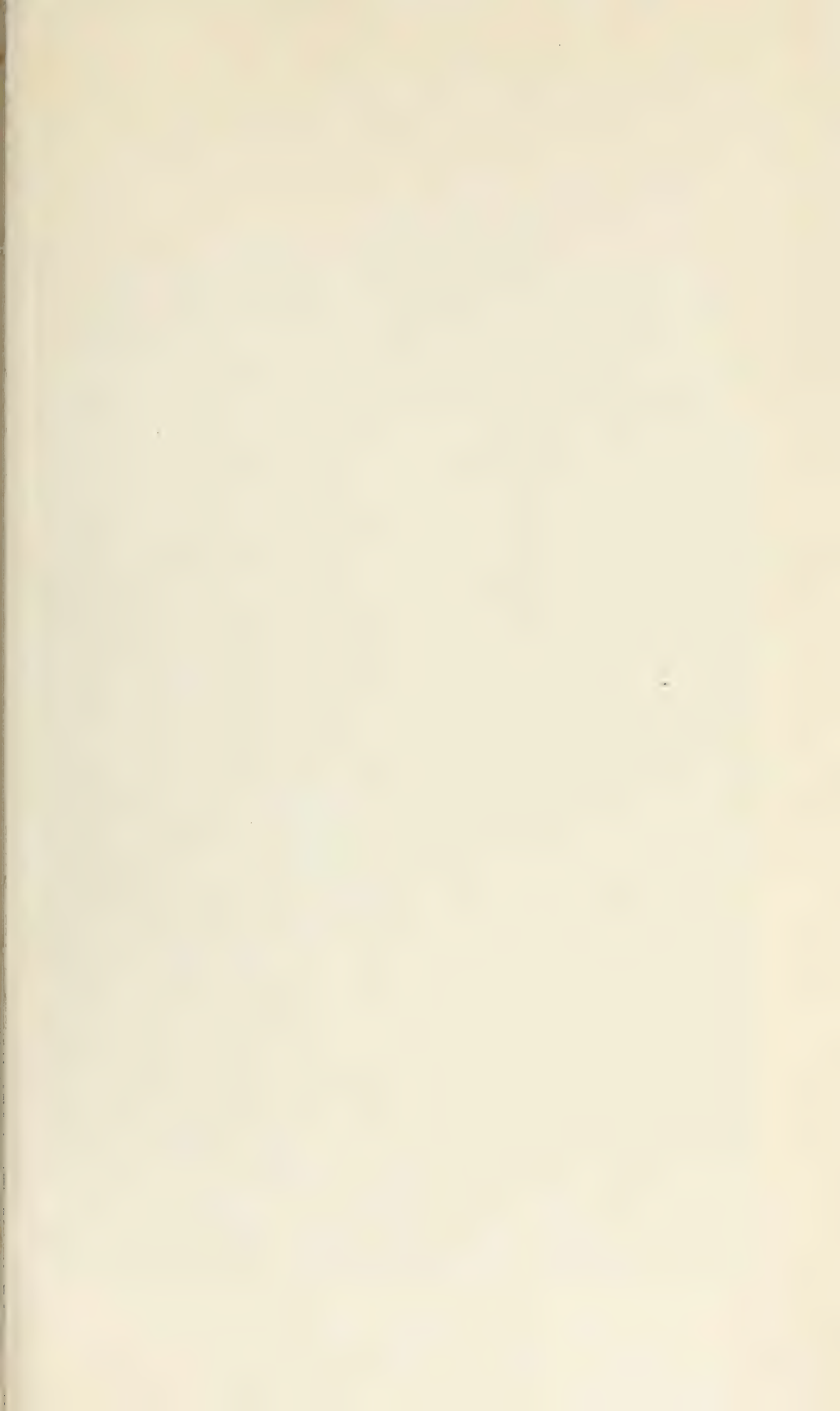
MODERN FARM HOUSE.





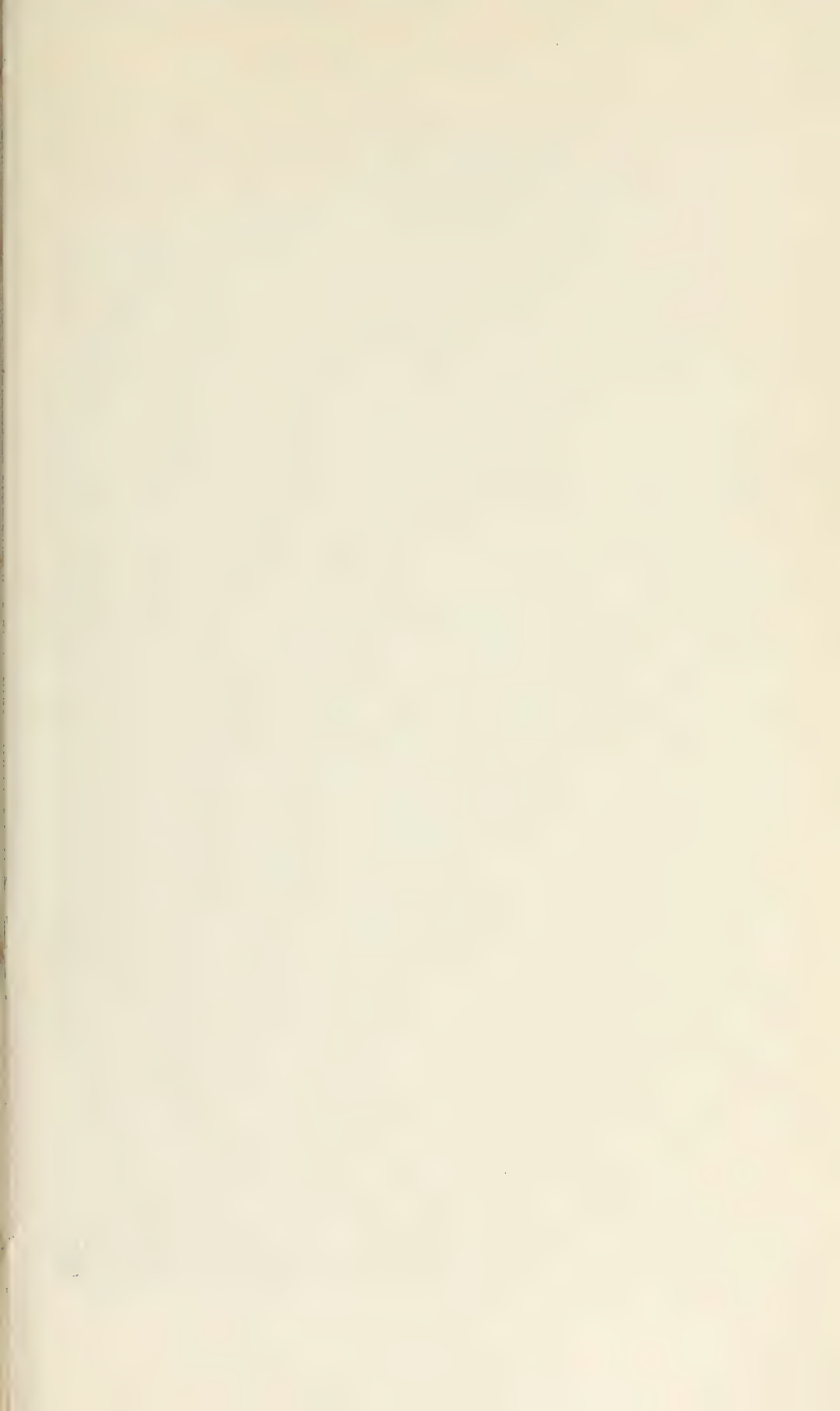
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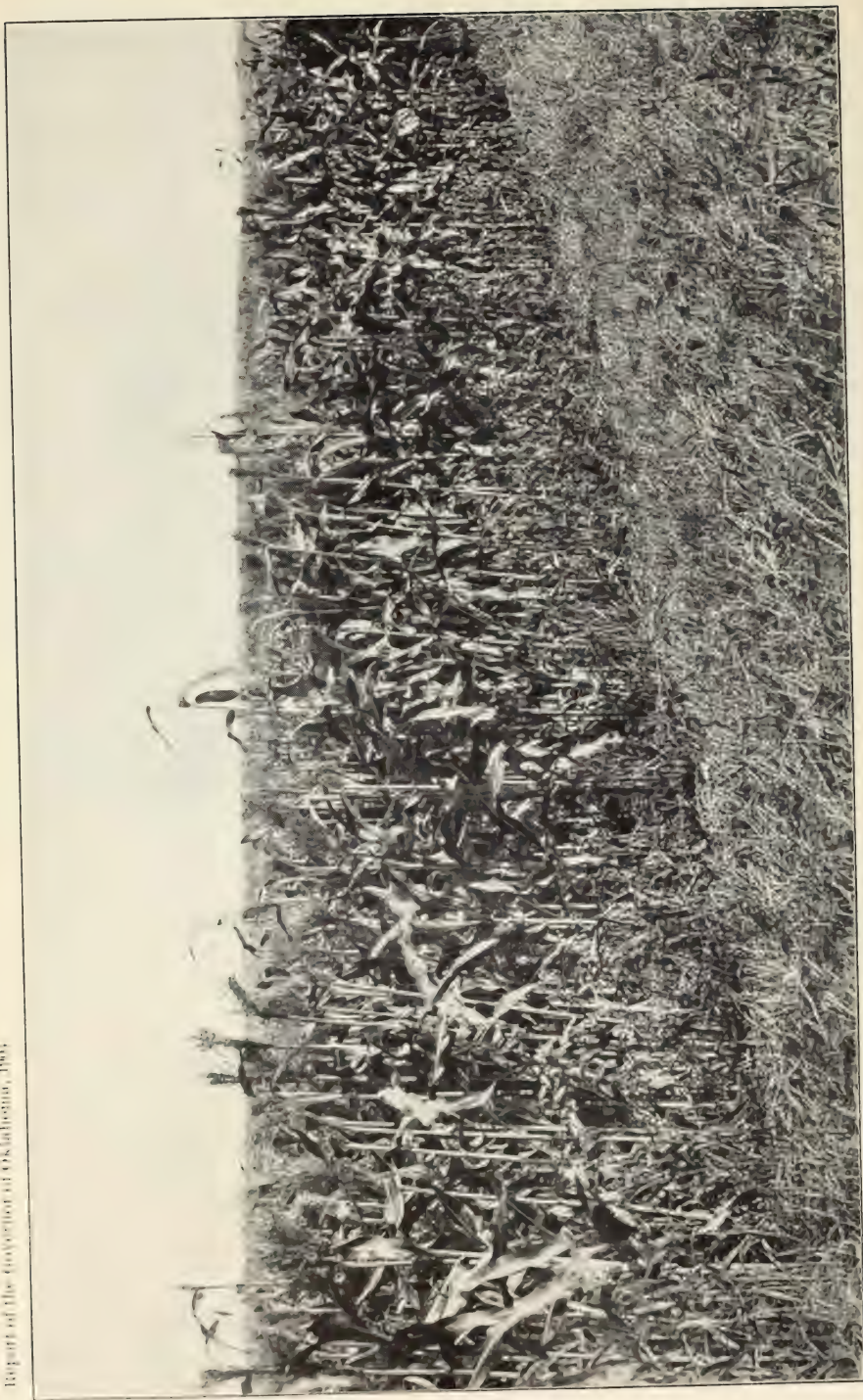




SPECIMENS OF TALL CORN.







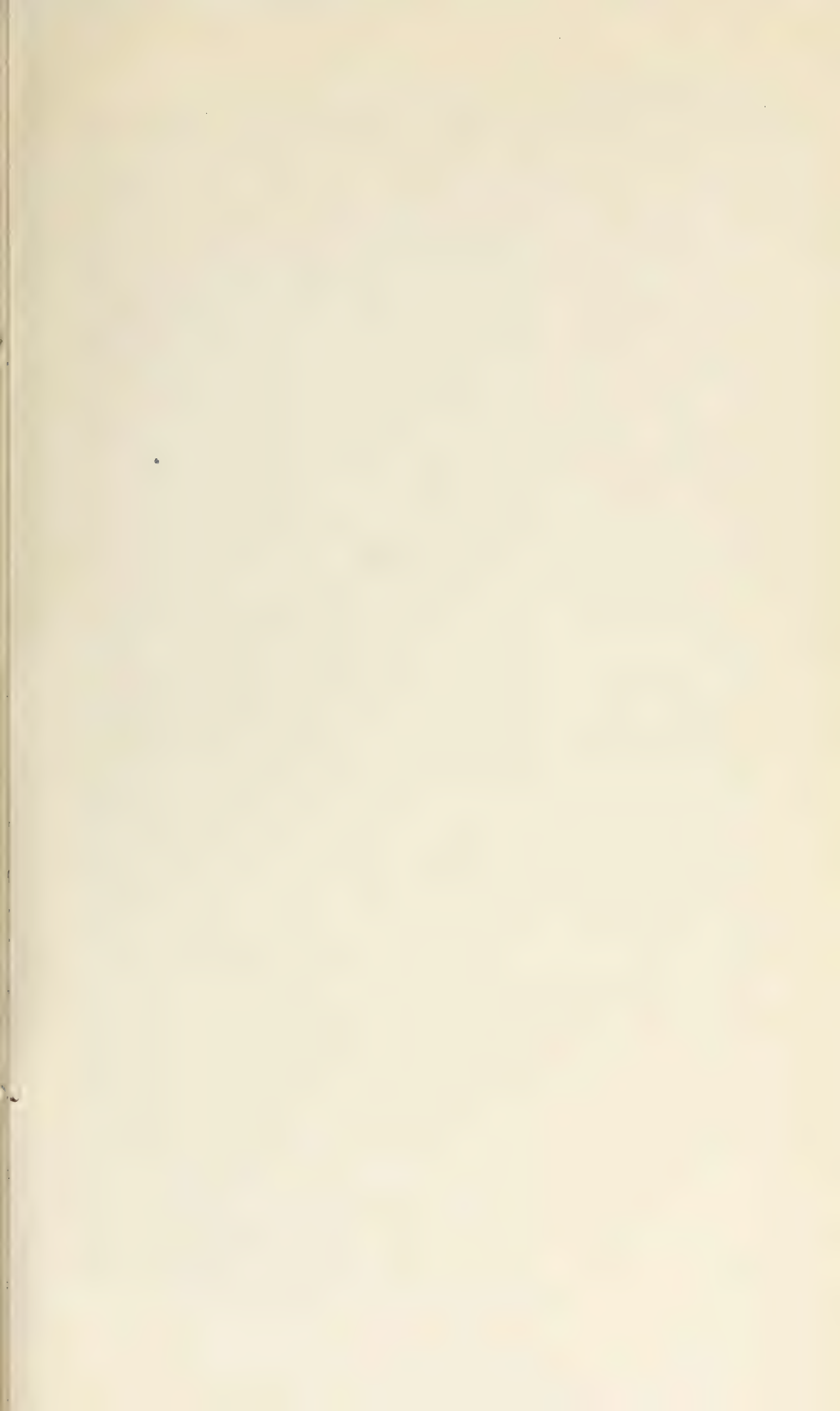
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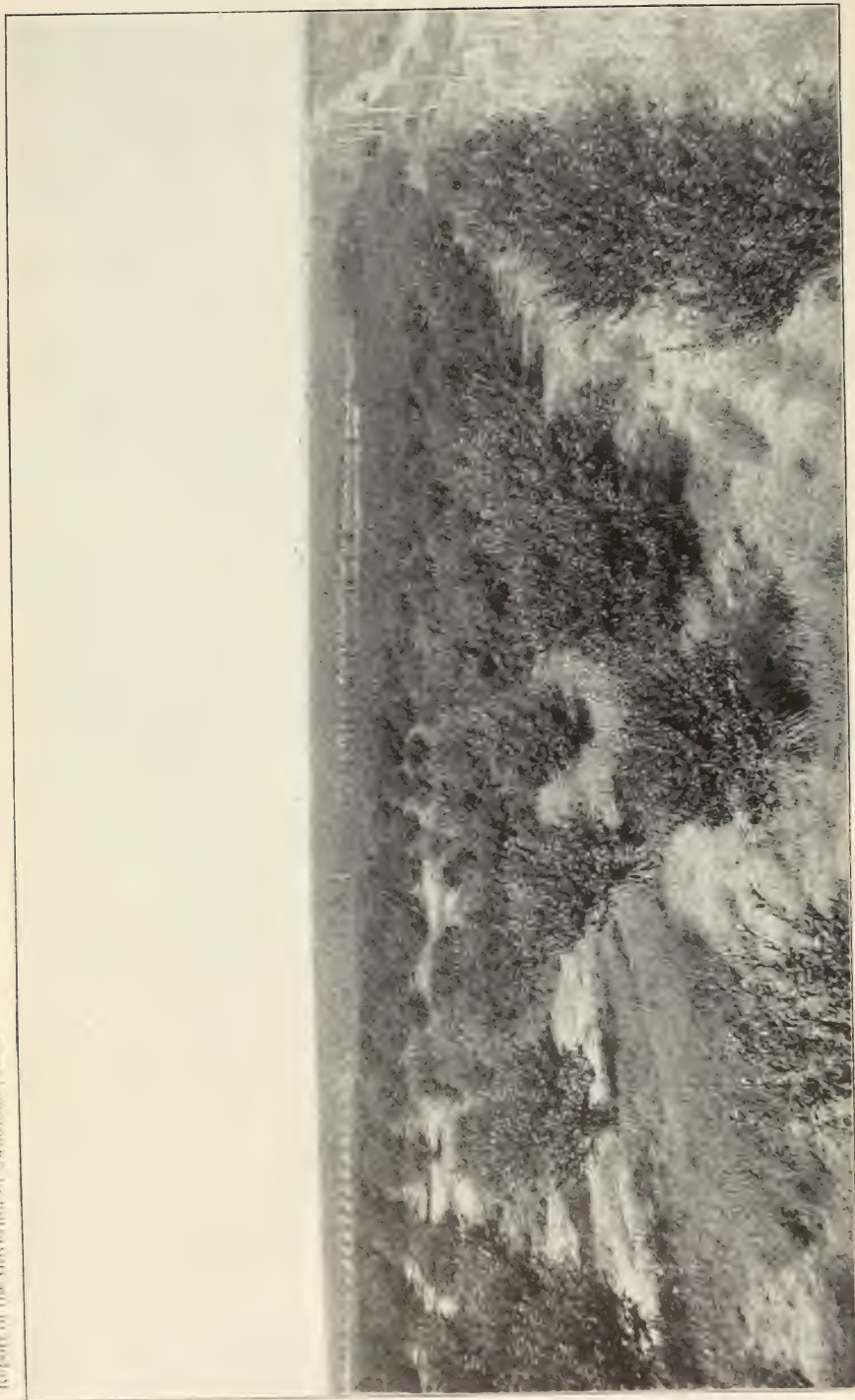




CORNFIELD.



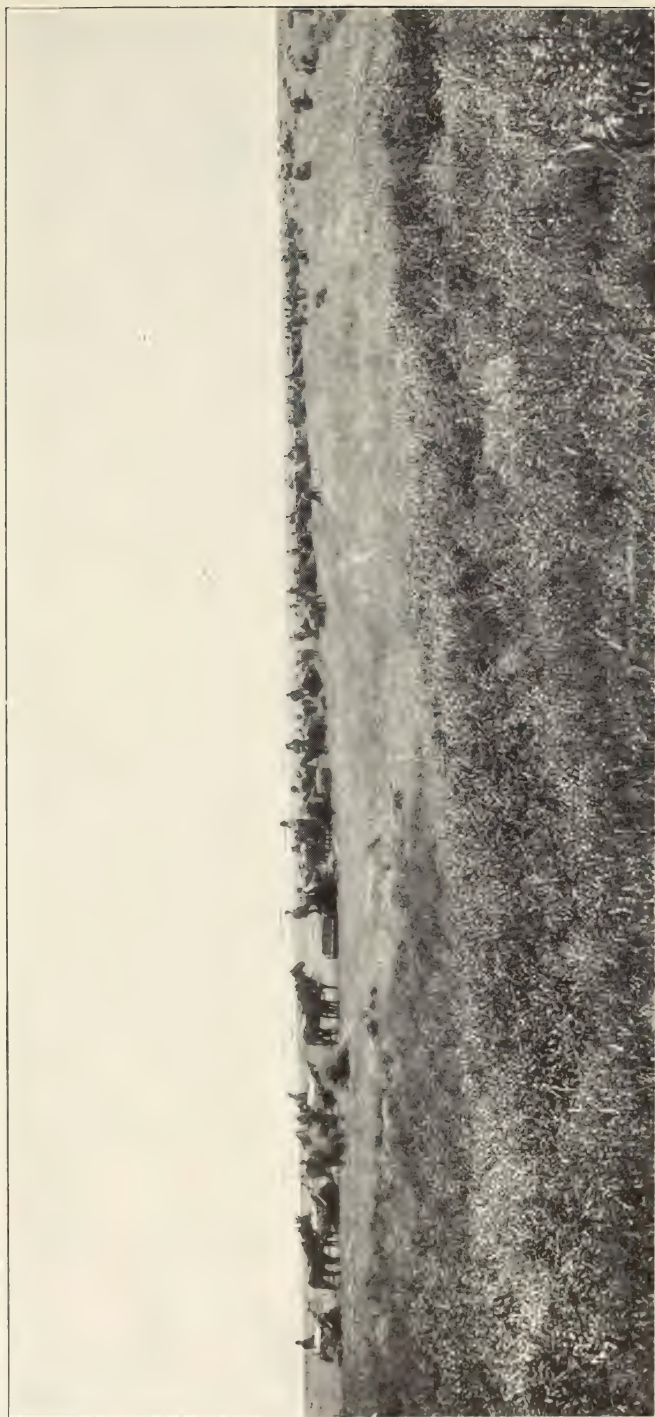




FRUIT FARM NEAR GUTHRIE.

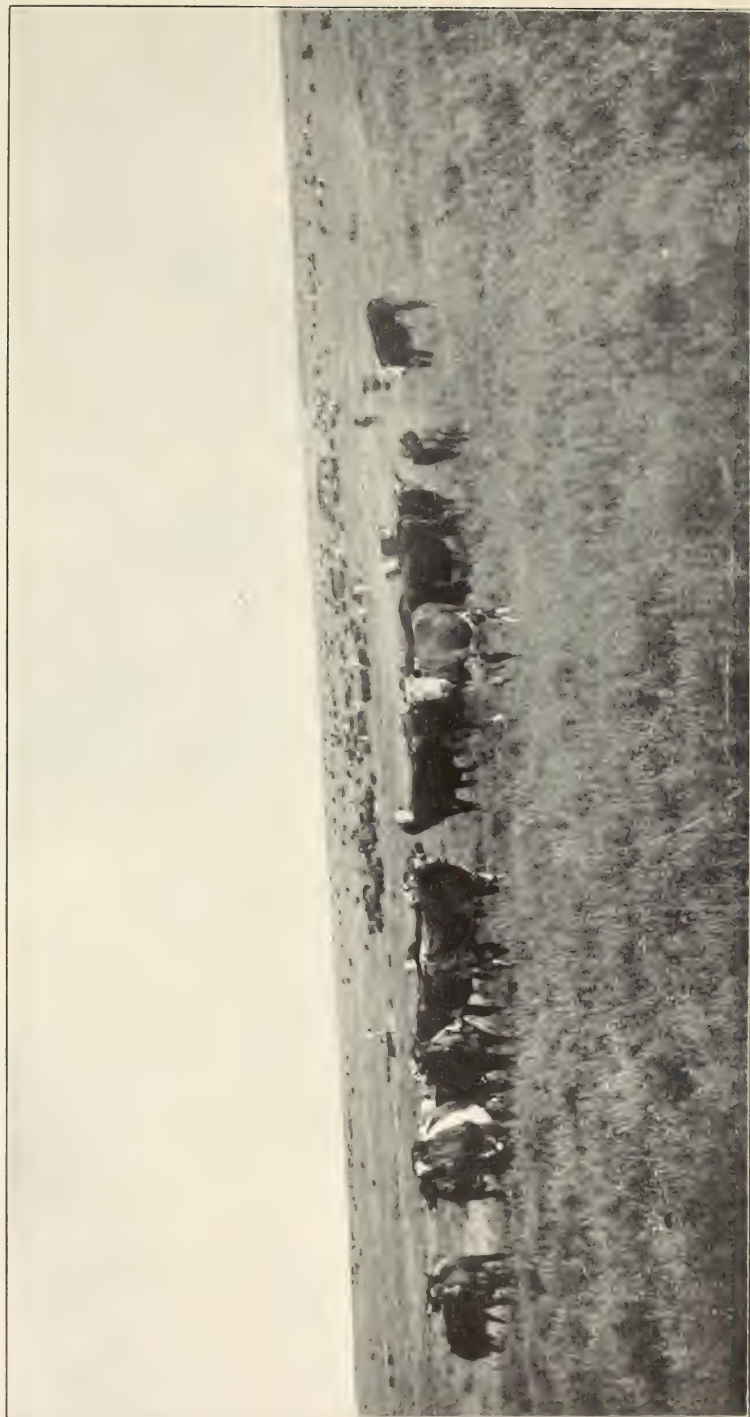






TWENTY-TWO HARVESTERS AT WORK IN ONE WHEAT FIELD.





CATTLE RANCH IN BEAVER COUNTY.



*Temperature and precipitation by seasons.*

	Tempera- ture.	Depar- ture.	Precipi- tation.	Depar- ture.
FALL MONTHS.				
September, 1902 .....	68.2	-5.4	5.94	+3.12
October, 1902 .....	62.9	-0.1	1.82	-0.76
November, 1902 .....	53.5	+5.3	5.52	+3.59
Average .....	61.5	-0.1	13.32	+5.75
WINTER MONTHS.				
December, 1902 .....	37.3	-2.3	2.09	-0.19
January, 1903 .....	39.2	+1.4	0.59	-0.57
February, 1903 .....	35.7	-2.1	3.95	+2.54
Average .....	37.4	-1.0	6.63	+1.78
SPRING MONTHS.				
March, 1903 .....	49.8	+0.1	2.73	+0.50
April, 1903 .....	60.3	-1.3	1.32	-1.54
May, 1903 .....	65.8	-3.1	7.33	+1.57
Average .....	58.6	-1.4	11.38	+0.53
SUMMER MONTHS.				
June, 1903 .....	70.4	-6.1	2.10	-1.47
July, 1903 .....	81.2	+0.5	2.55	-1.12
August, 1903 .....	80.5	-0.7	2.72	-0.21
Average .....	77.4	-2.1	7.37	-2.80
Seasonal average .....	58.7	-1.2	38.75	+5.26

## AGRICULTURE.

[J. B. Thoburn, secretary board of agriculture.]

That Oklahoma is an agricultural commonwealth is well evidenced by the fact that the Federal census for 1900 is authority for the statement that of the people over 10 years of age who are engaged in the gainful or productive occupations in Oklahoma 71.5 per cent are engaged in agriculture. This is a larger percentage than can be shown by any other State or Territory in the Union, with a single exception. Yet it is scarcely surprising that such a condition exists, as it was agriculturists and not adventurers who made Oklahoma what it is from the day of its first settlement. Agriculture in Oklahoma is thoroughly modern in its equipment and its achievements. The agricultural college and experiment station were duly located and established as one of the earliest acts of the first legislative assembly. As an evidence of their usefulness and of the estimation in which they are held by the farmers of the Territory, it is only necessary to cite the fact that with but one exception the mailing list of the Oklahoma Agricultural Experiment Station is larger than that of any other in the United States. It is also probable that in proportion to its population there are more agricultural papers subscribed for and read in Oklahoma than in any State in the Union.

The farmers' institute system, though of comparatively recent origin, is rapidly extending its organizations and influence into every community in the Territory.

Taken all in all, it will be seen that, with the various means of enlightenment in a state of aggressive activity, progress along the

lines of Oklahoma's preeminently greatest industry is only a natural sequence.

A brief survey of this interesting and important field in the industrial life of Oklahoma may not be out of place in this connection.

#### NATIVE GRASSES.

The native grasses of Oklahoma include a large number of species and gave to this region its fame as a grazing section long before it was opened to settlement. Since the settlement of the country, between plowing and close pasturing, the amount and value of the native grasses have been greatly diminished. The great variety in which they occurred, however, served as an indication of the adaptability of the climate and soil of Oklahoma to the successful culture of the various cereal and forage crops which have since been so successfully introduced and cultivated.

#### TAME GRASSES.

Bermuda grass is becoming deservedly popular in Oklahoma and seems destined to be largely used as a pasture grass. It is thoroughly hardy, highly nutritious, and very tenacious, and readily adapts itself to the soils and conditions of this latitude. English blue grass, timothy, and clover have all been tried with varying degrees of success, the best results having been obtained in the eastern part of the Territory. Alfalfa promises to be the great hay crop of Oklahoma. The acreage has been limited until within the past two years, but it is now being rapidly increased. From three to five crops can be cut each year, and some phenomenal yields and profits have been secured. Like clover and the other legumes, it is a great soil improver, and this fact, together with its great productiveness and high feeding value, will aid in revolutionizing farming methods in Oklahoma within the next few years, especially in the economic production of beef, pork, mutton, and butter fat. Cowpeas and soy beans have both been grown successfully in Oklahoma, and it is probable that they will be much more largely planted in the future, both for hog pasture and for hay.

#### INDIAN CORN.

Corn has been a staple crop in Oklahoma ever since the first year of its settlement, although during the past five years and until the present year the average has been more limited in the wheat-growing counties. It is grown quite generally on the farms of the eastern and central counties and to a lesser extent, though often with fair results, in the western counties, where it is largely replaced as a grain and forage crop by sorghum cane, Kaffir corn, or milo maize.

The total acreage in corn in 1903 was 1,455,000 acres and the aggregate yield was 26,336,000 bushels, a light yield as compared with that of 1902, when the total was 43,800,000 bushels.

Comparatively little of Oklahoma's corn crop is shipped beyond the borders of the Territory, nearly all of it being fed out on the farms where it is produced or in feed yards in the immediate vicinity.

## WHEAT.

Wheat is grown extensively in northern, central, and western Oklahoma. In addition to the grain yield, wheat is very generally utilized for pasturage during the winter and early spring, thus enabling the farmers to economize in the amount of rough feed necessary to carry live stock through the winter. The aggregate yield of wheat in Oklahoma in 1903 was 32,000,000 bushels, from 2,250,000 acres. Over one-half of the total crop was ground in the mills of Oklahoma.

The most of the wheat grown in Oklahoma is what is known as hard wheat. Oklahoma hard wheat and Oklahoma hard-wheat flour have been awarded gold medals for superior excellence in competition with the world.

## OATS.

Oats are grown in all parts of the Territory with a fair degree of success, the amount produced being just about sufficient to meet the home demand.

## OTHER GRAIN AND FODDER CROPS.

Sorghum is largely planted as a forage crop in Oklahoma, being but little used in the manufacture of syrup. Kaffir corn and milo maize, both of which are classed as nonsaccharine sorghums, are also extensively grown, the former as a fodder crop and the latter for its grain, which is valuable for feeding purposes.

## BROOM CORN.

Broom corn is a staple crop in the central counties of the Territory, from whence it is largely exported. About 10,000 tons were shipped from the Territory last year, being the product of 35,000 acres. The brush produced in Oklahoma is of excellent quality and commands a ready sale at remunerative prices.

## COTTON.

Cotton was first planted in the Territory in 1890, since which time the acreage and aggregate yield has been gradually increased. Oklahoma's cotton crop for 1903 amounted to 204,000 bales, which was a light yield compared with the average of preceding years, considering the acreage.

The bulk of Oklahoma's cotton crop is grown in the central and southern counties of the Territory. It makes it best returns when grown on the warm, sandy, well-drained soils of this region.

Cotton is grown as a cash crop. Cotton gins are to be found in every cotton-growing community in the Territory. There are several cotton compresses and a number of cotton-seed oil mills in Oklahoma. The products of these oil mills are cotton-seed oil, cotton-seed meal, and cotton-seed hulls. The meal and hulls are used extensively in local feed yards in fattening cattle.

## FRUIT GROWING.

The indigenous fruit trees, bushes, and vines of Oklahoma included fully 25 species and they served to indicate the adaptability of its climate and soil to fruit culture. The experience of fifteen short years



has fully borne out the expectations thus grounded. Orchards, vineyards, and small fruit plantations are to be found on many of the farms of eastern and central Oklahoma, and commercial orchards are beginning to be in evidence.

*Apples.*—The orchardists of Oklahoma have demonstrated that apples of the finest quality and size can be produced in this Territory. While it is barely fifteen years since the first orchards were planted in Oklahoma, the results have been such as to warrant the planting of large commercial orchards.

*Pears.*—Pears and quinces have not been extensively planted in Oklahoma, but enough has been done in this line to demonstrate that the successful culture of these fruits is not a matter of conjecture.

*Peaches.*—Oklahoma is the peach country par excellence. The peach crop has never been a total failure since the first peach trees planted in Oklahoma were old enough to bear. The Elberta peach seems to reach its highest possible development in the warm sandstone soils of eastern Oklahoma. For several seasons past extensive shipments of Oklahoma-grown Elbertas have been made to the great markets of the North and East. In August, 1903, one consignment was successfully placed upon the markets of Great Britain and netted a handsome profit. A number of commercial peach orchards have been planted during the past two years in Oklahoma, and the industry promises to become one of large proportions.

*Plums and apricots.*—With no less than seven separate and distinct botanical species of plums indigenous to the soil of Oklahoma, it is not strange that the exotic varieties readily adapt themselves to local conditions. Plum growing has not as yet been attempted on anything like a commercial scale, but such a stage of development will undoubtedly be reached in the course of time. Apricots do well in Oklahoma, but have not been largely planted.

*Grapes.*—Oklahoma is also the native home of the American grape, there being five or six indigenous species. The cultivated vine yields a splendid return for the skill and care of the vineyardist. A large number of improved varieties have been introduced, and local markets are supplied with home-grown grapes without artificial refrigeration for a period of fully ten weeks each year.

*Small fruits.*—Many of the small fruits are successfully grown in Oklahoma. Of these the blackberry, dewberry, and strawberry are the most profitable. Thus far there has been a good home market for all of the fruit of this class that has been produced. The possibilities that are presented for growing small fruit for shipment or for canning are very great, however, and it is believed that there will be a remarkable development along this line within the next few years.

#### VEGETABLES.

Truck gardening, like fruit growing, does not receive the attention that it deserves in Oklahoma. While most if not all of the varieties may be successfully grown here, this particular industry has not been developed as a specialty, except in very few instances. Experienced market gardeners would find here a remunerative field for their efforts.

*Potatoes.*—Potato culture has been made something of a specialty

along the valley of the North Canadian River, in Pottawatomie County. Two crops are grown on the same ground each year. The first crop, which is harvested in May or June, is shipped North and East. The second crop is not harvested until late in the fall. It is used almost exclusively for seed, southern-grown second-crop seed potatoes being in active demand for planting, even in the North. The yields are large and the profits are more than satisfactory.

*Sweet potatoes.*—Sweet potatoes produced in Oklahoma, especially if grown in sandy soil, are of peculiar excellence, and are being shipped from several localities in carload lots.

*Melons.*—Oklahoma watermelons are unexcelled, either in size or quality, while many parts of the Territory easily rival the celebrated Rocky Ford district in the production of choice muskmelons. Both of these yield immense crops, and the melon-growing and melon-shipping industries have passed beyond the experimental stage.

*Canning factories.*—Several canning factories have been erected within the past twelve months and are reported to be doing a satisfactory business. This is an industry that is capable of indefinite expansion in Oklahoma. Sweet corn and tomatoes have composed the bulk of products consumed thus far, but in time this business ought to consume peaches, plums, apricots, small fruits, and several other lines of vegetables in addition to those already mentioned.

#### IRRIGATION AND DRAINAGE.

The question of the conservation and equable distribution of soil moisture is one that directly concerns the interests of Oklahoma agriculture, especially in the western part of the Territory. While it is true that the greater part of the Territory may be said to be included within the limits of the humid region, where the artificial storage and later application of surplus storm waters is not usually necessary, if indeed it is desirable, yet at the same time the fact should be borne in mind that western Oklahoma often reaches well out beyond that ever-shifting and ill-defined boundary which separates the humid region from the semiarid region. It is, indeed, true that western Oklahoma need not regard irrigation as being so absolutely indispensable as it is in Arizona or Nevada. It is also probably true that western Oklahoma can continue to comfortably support its present population of thrifty and hardy people without resorting to irrigation. Irrigation is, however, desirable, if not necessary, in western Oklahoma for the purpose of supplementing the natural rainfall. In other words, a given quantity of water should irrigate more land in Oklahoma than in other Western States and Territories, and, consequently, a given sum of money thus expended should be productive of maximum results in Oklahoma, all other things being equal.

It is not necessary to recount all of the advantages to be gained by the development of agriculture under irrigation. While they are manifold, there is no dispute on that score. Oklahoma has a wealth of alluvial river valleys, some of which are subject to inundation in seasons of flood. Some of these wasteful waters, which flow from far out on the plains, might be stored against the coming of the day of scarcity. An object lesson is needed. Oklahoma has contributed liberally to the national irrigation reclamation fund, and it would seem rather as a matter of right than favor that its people ask for the



expenditure of a part of that fund in the construction of one or more such storage systems as an object lesson. As such the value of one or two such storage systems would be very great. The demand for the early construction of other storage systems would be so strong that it would tend to stimulate the activity of private enterprise in the construction of smaller and less pretentious storage works, and it also might possibly result in the investment of outside capital in the construction of those of more considerable magnitude.

While the people of western Oklahoma are interested in the storage of water for irrigation purposes, there are some localities in the eastern part of the Territory where the people are quite as much interested in the matter of drainage. This is particularly true of those who reside in the valley of the Deep Fork of the Canadian River, in Lincoln and Oklahoma counties. The topography of this watershed is such that the floods are quickly precipitated into the valley, with disastrous results to the farms and crops on its fertile flood plain. The circumstances are such as to warrant a careful survey by hydrographic engineers and forest experts. There is reason to believe that, by resorting to a proper and systematic means of reclamation, the recurrence of such floods can be reduced in number and minimized in their destructive effects.

The valleys of the Little River, the North Canadian, and the Washita are likewise more or less subject to overflow. In the valley of the former, in Pottawatomie County, some extensive drainage ditches have been dug within the past twelve months. Both the North Canadian and the Washita have their sources so far west that a considerable portion of their surplus flood waters may some day be stored for irrigation purposes, thus reducing the extent and effect of the floods in their lower valleys.

#### LIVE STOCK.

*Cattle.*—Oklahoma has been a cattle country almost from the days that the buffalo ceased to roam over its plains and prairies. For a decade and a half before the opening of Oklahoma the range-cattle business was practically the sole industry of the entire region; but the day of the big cattle range is gone, and with it has gone the long-horned, spindle-shanked, slab-sided bovine type. Instead there is to be found the small or medium-sized farm herd of the beef or dairy animals. Good foundation herds of pedigreed animals are to be found in every county in the Territory. With the increasing acreage of tame grasses and the application of a greater degree of skill and knowledge in breeding and feeding, Oklahoma will continue to forge to the front as a beef-producing section.

*Sheep and goats.*—Sheep husbandry has generally been neglected in Oklahoma, though conditions are admitted to be all that could be desired. The flocks which are kept in the Territory at present could be multiplied in number several times before the production of mutton would equal a normal local demand.

Angora goats have been introduced and have proven to be a profitable adjunct to the Oklahoma farm, particularly in the timbered sections, where they are used to clear the ground of brush.

*Horses.*—Horses of the draft, roadster, trotting, and saddle types have all been successfully bred and reared in Oklahoma, as well as



those of the general-purpose type. While horse breeding and raising has not been developed as a specialty, there has been enough done in this line to thoroughly demonstrate the fact that natural conditions are such as to facilitate the rearing and perfect development of horses of any type or class.

*Swine.*—Hogs were found running wild in the woods in eastern Oklahoma at the time of its settlement, and pork raising has been a constant and profitable source of revenue ever since. Not only do the forage and cereal crops, upon which the hog thrives and fattens, grow and yield well in Oklahoma, but the climate, soil, water, and other conditions seem to be conducive to its healthy and profitable development.

*Dairying.*—One most important industry which has been neglected in Oklahoma is that of dairying. With all conditions right for an ideal dairying country, with a good home market, and with splendid shipping facilities, it seems strange that a great deal of the butter is shipped in from neighboring States while practically all of the cheese consumed is shipped in from points 800 to 1,500 miles distant. Experienced dairymen might do well to investigate the opportunities which are to be found here.

*Poultry.*—There is no part of the American continent in which the natural conditions are better adapted to poultry farming than those which exist in Oklahoma. Originally the home of countless thousands of wild turkeys, prairie chicken, partridges, and quail, it is now the ideal land for the poultry grower. The ordinary breeds of domestic fowls not only lay eggs the year around, but actually hatch their broods in every month of the year. While poultry growing is regarded as a mere side line in Oklahoma agriculture, yet the value of live and dressed poultry and eggs which are marketed and shipped from the Territory each year is probably upward of \$2,500,000.

*Live stock returned for taxation, 1904.*

County.	Horses.	Mules and asses.	Cattle.	Sheep.	Swine.
Beaver .....	9,735	1,128	88,864	18,063	1,082
Blaine .....	9,273	1,333	24,401	349	3,574
Caddo .....	13,977	2,715	29,298	1,049	11,330
Canadian .....	10,457	2,077	28,978	192	9,306
Cleveland .....	6,995	2,542	12,843	436	9,673
Comanche .....	15,688	4,351	47,244	426	7,977
Custer .....	10,703	2,304	29,128	169	15,522
Day .....	5,537	987	16,873	567	3,592
Dewey .....	8,488	1,724	25,450	799	6,560
Garfield .....	15,688	2,613	40,289	305	14,941
Grant .....	14,384	2,520	38,922	140	16,021
Greer .....	21,597	6,422	48,888	1,075	12,238
Kay .....	13,910	2,869	54,634	129	21,643
Kingfisher .....	11,293	2,133	32,477	693	7,505
Kiowa .....	8,672	2,137	17,555	94	2,913
Lincoln .....	13,605	3,833	27,739	832	13,873
Logan .....	10,719	2,516	24,507	686	8,460
Noble .....	8,231	1,732	32,428	899	9,008
Oklahoma .....	10,971	2,373	21,773	681	9,334
Pawnee .....	13,176	2,779	138,370	1,513	22,846
Payne .....	11,287	2,569	27,206	658	13,362
Pottawatomie .....	10,378	4,143	20,225	281	9,606
Roger Mills .....	9,277	2,409	30,293	155	9,939
Washita .....	10,565	3,625	29,237	196	12,949
Woods .....	34,361	3,787	103,920	2,839	26,308
Woodward .....	19,385	2,427	65,498	2,513	5,856
Total .....	328,352	70,048	1,057,020	35,735	287,368

## NATIVE TREES AND SYLVICULTURE.

[Wm. T. Little.]

So close to the world of Texas, Oklahoma was once referred to as small, giving forestry and silviculture students a too limited view of these subjects as here pertaining. Largely people from 200 miles farther west in Kansas, imagination brought that climate along.

Oklahoma covers more longitude than all of New England, having trees separated by to exceed 350 miles, and taking one from the rain belt that grows a Michigan sugar maple, through oak capped hills, across prairies of elm-lined streams, by the Wichita Mountains' ash, over dry channels fringed with cottonwood, and on to where the mountain air has borne pine cones planted there to grow one tree. It is so far away and just so near foothills of the Rockies that scarce more than 10 miles from Oklahoma's northwestern corner is found the only native pine tree in this Territory. With none intervening, 400 miles to the southeast in the Choctaw Nation, one finds this northern mountain conifer replaced by the pine of southern sand flats and hills.

Latitude has less of distance as well as climatic variance, differing from longitude in that its southern decrease of altitude is accompanied by an increase of annual precipitation. As a given longitude passes southward the timber belt extends farther to the west, such growths as wild berries and root plants becoming more frequent. This applies also to mistletoe, and to Oklahoma's east the holly grows farther west as one goes south.

The eastern press so persistently refers to Oklahoma as the plains that many can not realize that the Mississippi's alluvial regions approach within an equestrian day of our Territory's southeastern corner. Original Oklahoma did not reach within 115 miles of the plains, while one-fourth of her east and west distance might be classed either timber or prairie.

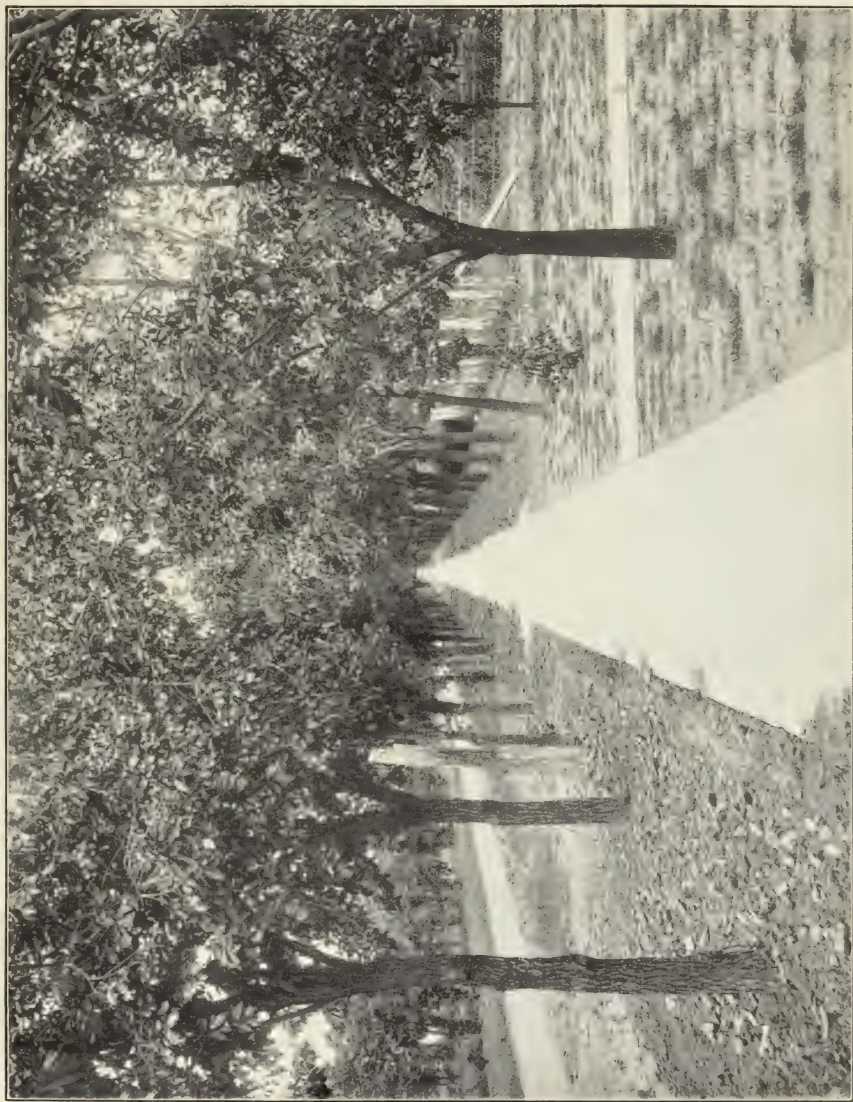
Primarily subservient to precipitation's geometrical decrease, along with greater altitude of more western longitude, Oklahoma's native timber districts largely conform to the watersheds of eight rivers—Red, Ouachita, Canadian, North Canadian (its headwaters of Beaver being included), Cimarron, Salt Fork of Arkansas, and Arkansas—all flowing from northwest to southeast. These are mentioned to the exclusion of many shorter and some of greater water flow, being long enough to more than locally attract currents of atmospheric moisture.

From northeast to southwest doubles altitude, passing from bottoms and through canyons that have supplied European cabinet-makers with walnut to buffalo-grass sward, whose occasional mesquite groves provide firewood for root diggers no less than wood choppers.

From southeast to northwest, a distance of 335 miles, altitude increases by an approximate fivefold, changing from the benefits of drainage to the necessity of irrigation, from saw-log timber to dwarf brush.

Walnut, pecan, hickory, sycamore, burr and post oak are bottom-land growths of eastern Oklahoma, pecan often extending to swale ground, hickory climbing some hill slopes; and post oak, along with occasional black-jack scatterings, timbering an immense area of

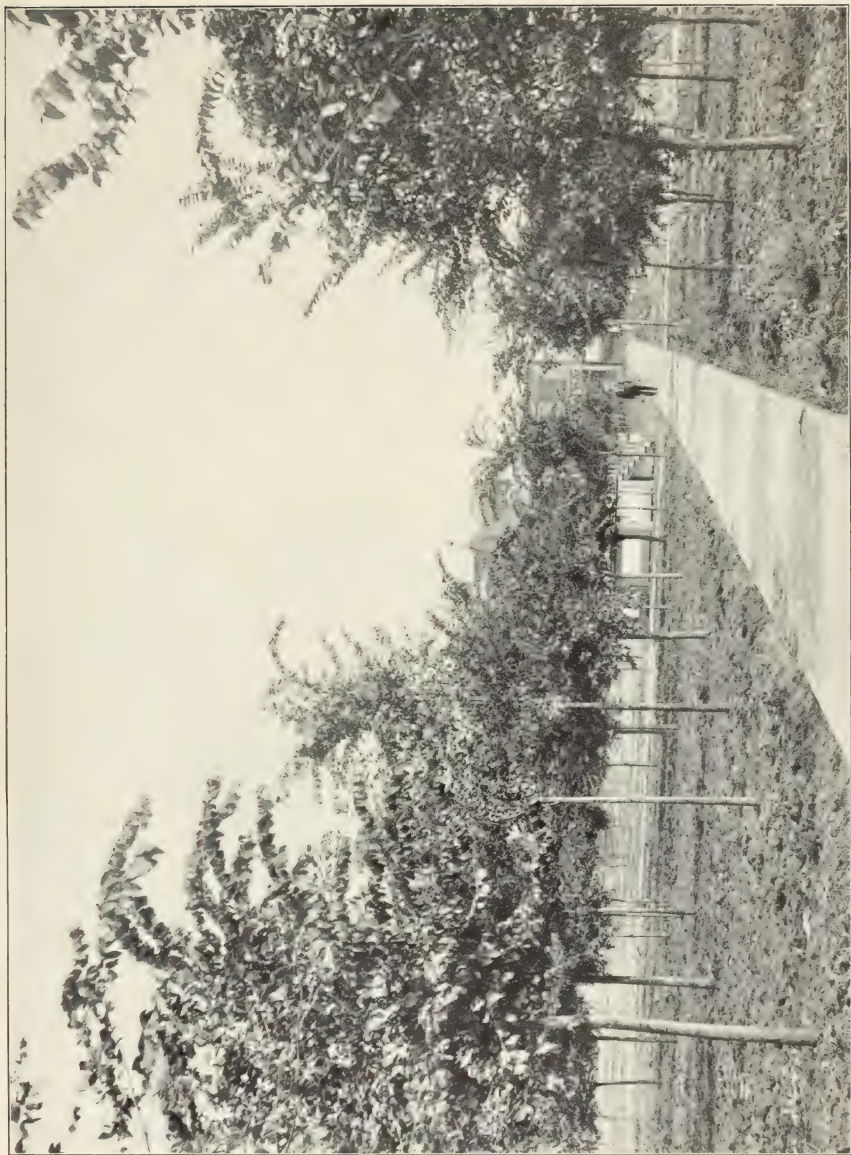




UNIVERSITY WALK, SHOWING TREES 8 YEARS OLD.







WHITE ELMS, NINE YEARS' GROWTH, PERRY COURT-HOUSE PARK.





upland. Sycamore and walnut seldom leave the immediate bottom, while burr oak follows up small streams with abrupt banks. With an increased per cent of decrease these conditions give way as the 30-inch rain belt and 1,000-foot elevation line are reached in their general southwestern course from about where the Arkansas River enters Oklahoma off toward between the Keechi Hills and Arbuckle Mountains. By now the black-jack has almost excluded even upland post oak and intervening prairies are of increased area, sycamore and hickory have disappeared, pecan becomes a curiosity, and all saw-log oak must cope with elm and hackberry and cottonwood. Along this same demarcation the last of mistletoe is seen.

To the farther west post oak makes an occasional appearance, and soon even black-jack districts confine themselves to such soils as are peculiarly adapted, bottom oak takes on double value, walnut changes its contour as a tree, elm and hackberry and cottonwood are dominant, and it can be seen that yet a little farther on and timber will disappear. Then one comes to the one Oklahoma county having as little rainfall as that portion of Russia in which is raised the wheat from which is made the world's highest priced flour, and this is a very good place to remember that cereals demand more water than trees.

In a small way contradicting all this are such exceptions as are locally brought about by soil chemistry, soil physics, diverging or interflowing water courses, subirrigation, hill wind-breaks and mountains, sufficient to deviate or localize atmospheric currents. Not universally, yet usually, these eight rivers have their longest slopes at the north, and there are places where for miles one bank is higher than its adjacent country for miles distant, and, peculiar as it may appear, that also usually being the stream's north. As our growing season winds come from a yet hotter and dryer southwest, the fact of a large majority sloping south has gone far to retard a volunteer forestation of both prairie and plain, as this slope proposition applies from British domain to Gulf. If so far west as to limit tree growth to stream bank, the north has an advantage of having been cooled by winds passing over water surface. If looking for timber remote from water courses, other conditions being identical, it will be found to the stream's south, as both wind and sun strike there obliquely. So, in addition to having the longer slope, it is the north area that declines, it is a reasonable conclusion that south banks have the more abrupt slopes from adjacent inlands. From this must result many sodless places well calculated to give tree seeds lodging and measurably insure immunity from fire.

As either stream banks or bottom boundary slopes are higher in a hill country than on prairie, so are they higher on prairie than plain, making it easier for a plain's stream to encroach on its convex side. This invites wind-swept sand to lodge on the concave bank, often contradicting the more eastern general rule that bottom lands are "within" the bend. As sandy soil does not grow compact turf it quickly gives cover to flying seed, also extending a degree of fire protection. So sand induces native timber on the plains, and it finds an able supplement in stone's capacity for sustaining moist conditions.

The cross timbers extending from Quanah Parker's off south toward Texas had their start in a belt of sand running from the

Wichita Mountains off south through the compactest kind of prairie land on which grows no tree except that runt of forestdom—mesquite. The ash in those mountains have foundation hard by a moisture-based stone or alluvial formation. Those walnuts at the mountain's southwest are in a measure subirrigated. Sugar maples and walnuts of Caddo County grow for the most part in canyon-like environment. The magnificent cedars of northwestern Oklahoma were well below the wind line until age gave vigor.

It is not so much lack of rainfall as lack of opportunity. Within nine years after fires were kept out of a sandy area northeast of Overbrook, Chickasaw Nation, a grass prairie changed to oak trees so close and high that Dawes Commission land appraisers could not even lead their saddle horses through. While at work in Choctaw lands near the Arkansas line, in a country devastated by sawmills, no stump indicated a tree one century old, yet in southwestern Oklahoma a tree has been felled whose age is reported as 180 years. Day County produces on an almost brush a very perfect walnut, not so large as a hazelnut, looking equally like the American and the English walnut. Also habitat of that region are persimmons of superior flavor.

Especially from the 180-year-old tree one can not argue perceptible change of climate during that time, but this is no proof against such hopes for the future. Nature works inadvertently and only in such places as chance prospers. Had horse breeding been left to nature, Lou Dillon would not have been produced within the next hundred thousand years. In Nebraska, above any of Oklahoma's altitude, with less than 10 inches of rain for the year, a catalpa tree survived in good condition. South of Dodge City, Kans., are pine that have been growing in prairie sod since those land crusades of the eighties. At Ness City, Kans., an upland park has sustained itself for a quarter of a century. These places are due north of the east end of Oklahoma's driest country. Oklahoma College grounds, the Perry Park, Noble County's upland walnuts that came to bearing when seven years from seed, and Garfield County's upland black-locust plantation that will soon be cut for posts are life-size illustrations of silva-culture in Oklahoma.

At the World's Fair was exhibited a section of cottonwood 16 inches in diameter, it having grown from a seed that volunteered in an upland wheat field eight years ago.

If exclusively for shade and for all time, plant elm—American white elm—on upland or bottom. If exclusively for a quick shade, and you know how to so trim as to guard against wind, soft maple will please you on upland or bottom. To combine almost instantaneous shade and rapid post production, use black locust. And remember entire States have been visited by a worm destroying all plantings within two seasons. Ash proves a ready upland grower whose earlier stage has an enemy in worm depoliators, blackheart sometimes making trouble later on. Catalpa speciosa is practically without enemies. Its shade is dense, but foliage and bloom make it a dirty street tree. As a post, being almost devoid of alburnum, it is superior to black locust. Like walnut, its home is on the bottom. Pine is preferable to cedar, as the latter harbors fruit enemies. This is too far south for box elder.

Each individual requires a certain number of cubic feet of soil,



dependent upon tree size and age as well as soil chemistry and physics. Without reviewing shade-resisting properties of various species, shallow rooters thrive better on upland than do deep rooters. In appropriating their cubic feet of earth, the former extends excessively out from the tree, suggesting much thinning in case planting has been close enough to insure early soil shading. Coarse, deep rooters belong on deep soil.

The premise that trees reduce wind is conceded, as is the one that wind pumps immense quantities of water from soil. The conclusion suggests the desirability of some well-centralized tree-planting movement.

Nine years ago the county commissioners of Noble County authorized the establishment of a wooded park on a plot of ground comprising  $3\frac{1}{4}$  acres in the center of the city of Perry. On this small tract was planted 8,600 American white elm seedlings. Within two years the county received for excess trees \$172 more than the total cost had been. Thus a wooded park was obtained for nothing and \$24 per acre annual ground rental in addition.

#### POTATO GROWING.

[Ewers White.]

The location, soil, and climate are the three things which make Oklahoma the most profitable place in the United States for raising early potatoes. These three agencies combine in powerful union in the Territory, and experienced potato raisers from the famous Kaw Valley, in Kansas, are coming to the Territory in considerable numbers to engage in the raising of potatoes for the reason that our potatoes here are all marketed before they commence to dig in the Kaw Valley, and hence, on account of reaching the market early they command a better price per bushel in the northern markets than do those of the valley farms. Oklahoma potato raisers also realize more for their potatoes shipped to the southern markets on account of the very low freight rates. Potatoes from this Territory compete with the Texas potatoes in the Texas markets and then bring a good profit to the Oklahoma growers.

Most of the potatoes raised in Oklahoma are grown on the dark, sandy loam of the North Canadian bottom, in Pottawatomie County, though Oklahoma County also raises a good many. The sandy, black-jack lands, as proven by experience, are also good for potato raising. While this land will not produce as many bushels per acre as the rich bottom lands, it produces a much smoother and better-selling potato than the bottom lands and realizes as much as 5 cents more per bushel, thus making up the deficiency in the size of the yield.

One of the grandest points concerning potato raising in Oklahoma is the fact that two crops per year can be grown on the same ground. The first crop is planted between the 15th of February and the 10th of March, and the second crop as soon as the first crop is dug, until about the 10th of August. The digging of the first crop commences about the 5th of June and ends about the 10th of July. The second crop is marketed in the fall when it matures.

Two kinds of early potatoes are grown almost exclusively, the Bliss Triumph and the Early Ohio. The Bliss Triumph is mostly grown from the fact that the potatoes from the first crop are planted to give



a second crop, and the second crop is used for seed for the next spring. The Early Ohios, while about five days later than the Bliss, are a much better yielder and a better seller than the Bliss in both northern and southern markets. Sixteen different crops of the Bliss have been grown here from the seed which was originally brought from Arkansas, and they produce as many bushels per acre and as good a potato as those shipped from the North. A second crop of the Ohios can not be raised, and the spring seed is always shipped from the Red River Valley, in Dakota.

It was not generally known that potatoes could be profitably raised in Oklahoma until 1900, when about 5 carloads were shipped to the northern markets, the shippers realizing a fine profit. In 1901 the business grew to considerable proportions, 179 cars being shipped that year, selling for 65 cents per bushel. In 1902, 829 cars of the first crop were shipped, at an average price of 40 cents per bushel. In 1903, 587 cars of fine potatoes found their way from Oklahoma to the city markets, at an average price of 40 cents per bushel. This year, up to date, there have been shipped 439 cars, at an average price of 70 cents per bushel. Each car of potatoes, the season through, averages 450 bushels, and at 70 cents net the farmer gets \$315 per car for his crop, which costs him an average of 25 cents per bushel to raise and market—a clear gain to him of more than \$200 per car. The average gain at this figure has been computed to be over \$45 per acre. Some growers cleared this year, after taking out all expenses and paying rent on their land, \$145 per acre, or twice the value of the land on which the potatoes were grown.

What has been said in this article on the raising and marketing of potatoes in Pottawatomie County might be said of nearly every other county in Oklahoma if the farmers in other counties would only start to raising them. The entire Territory, for the past five years, has not shipped over 700 cars per year, while 2,500 carloads could as easily and profitably have been marketed in the same time. Shawnee is the largest potato-shipping point in the United States during a portion of the year, and as many as 70 carloads have been shipped in a single day from that city. The greatest number of carloads from any city in the country has never equaled Shawnee's record. The railroads have done a great deal toward encouraging the industry, using every means at their command to aid the shippers. They rush the potatoes across the country to the city markets at passenger speed, and as the market extends on the west to Denver and Salt Lake City, on the north to Minneapolis and St. Paul, on the east to Buffalo, N. Y., and Cleveland, Ohio, and on the south to New Orleans, La., this fast running has proven to be of great benefit to the shippers and enables them to get the crop to market in the very best condition.

In this respect the Rock Island Railroad Company deserves especial praise, for it has not only given the shippers fast through trains to the city markets, but it has also given them every possible advantage in the way of switches, where a number of farmers can load without the inconvenience of driving a long distance to the potato centers, and it has cheerfully hauled parts of loads from one switch to another in order that the cars might be filled. It then hauls the cars to Shawnee, or the other shipping centers, where the buyers make an inspection of the cars and bill them to their destinations. While all the roads have been obliging to the potato growers and shippers, the Rock

Island company and its agents have done more than any other road, and the potato raisers and shippers are very proud of that line's efforts to aid them. The Rock Island has also distributed some valuable literature on the potato-growing question among both the raisers in Oklahoma and prospective residents in other sections, and done many other things which have made the road popular in this Territory with the potato men.

#### RAILWAYS.

Railway building and the development of Oklahoma have been coincident. The railroad growth has been rapid, but necessity demanded it. Much of the prosperity of the early settler must be attributed to the railroads, which gave him his markets and afforded transportation of his products for which there was a demand outside our borders. Then, too, the railroads have been well compensated for their energy in pushing into new realms. All have prospered.

Every county in the Territory has more or less railway mileage. Twenty-three out of the twenty-six county seats have railway facilities. Several cities have from three to eight lines in and out, thus placing the producer, manufacturer, and merchant in competitive touch with the markets of the larger cities. A direct line to the Gulf also brings the markets of Europe within our reach.

The Atchison, Topeka and Santa Fe Railroad entering Oklahoma from the north passes through the counties of Kay, Noble, Payne, Logan, Oklahoma, and Cleveland on its way to the Gulf.

A branch line, termed the Eastern Oklahoma Division, leaves the main line at Newkirk, passing out of Kay County into the Osage Indian Reservation. It reenters the Territory at Ralston, passing through Pawnee, Payne, Lincoln, and Pottawatomie counties, uniting with the main line at Pauls Valley, in the Chickasaw Nation, Indian Territory. Another line of the same division starts at Guthrie and passes through the counties of Logan, Payne, and Pawnee, joining the other portion of the division at Cushing and also at Skedee.

The Santa Fe also has a line from Anthony, Kans., passing through the counties of Woods and Woodward.

The Chicago, Rock Island and Pacific also enters the Territory from the north and passes through the counties of Grant, Garfield, Kingfisher, and Canadian en route for Fort, Worth Tex. A branch leaves the main line at Enid, passing through Garfield, Woods, Blaine, Caddo, and Comanche counties, joining the main line again at Waurika.

Another branch line extends westward from Chickasha, Ind. T., through Caddo and Kiowa counties, and terminates at Mangum, in Greer County. A line also passes through Beaver County to north-western Texas points.

The Choctaw, Oklahoma and Gulf, now a portion of the Rock Island system, enters the Territory from the east, passing westward through the counties of Pottawatomie, Oklahoma, Canadian, Blaine, Caddo, Custer, Roger Mills, and Greer to north Texas points.

A line also extends north from Geary through Blaine and Woods counties.

The main line of the St. Louis and San Francisco Railroad enters the Territory from the east, passing through Lincoln and Oklahoma



counties, thence across the northwest corner of the Chickasaw Nation, through Caddo, Comanche, and Greer counties, to Quannah, Tex.

Another line of the 'Frisco enters the Territory from the north, passing through the counties of Kay, Grant, Garfield, Woods, Blaine, Dewey, Custer, Washita, Kiowa, and Comanche to Vernon, Tex.

A line also extends from Tulsa, Ind. T., through the counties of Pawnee, Noble, and Garfield. This line is now being extended to some point in Woods County.

The Missouri, Kansas and Texas Railroad enters the Territory from the northeast, passing through the counties of Pawnee, Payne, Lincoln, Oklahoma, and Logan. A line also extends from Atoka, Ind. T., on the main line, to Oklahoma City, passing through the counties of Pottawatomie and Oklahoma.

The Denver, Enid and Gulf extends from Guthrie to Enid, through the counties of Logan and Garfield.

The El Reno and Western extends from Guthrie to El Reno, through the counties of Logan and Canadian.

The Fort Smith and Western enters the Territory from the east and passes through the counties of Lincoln and Logan to Guthrie.

The Kansas City, Mexico and Orient enters the Territory from the north, passing through Woods County in its southwesterly course. It is in operation as far south as Fairview.

#### RAILWAYS CHARTERED.

Hon. William Grimes, Territorial secretary, furnishes the following list of railway companies which through their incorporators have secured charters during the past year:

The Arkansas Valley and Gulf Railway Company. Place of business, Medford, Okla. Capital stock, \$4,000,000. Incorporators, A. A. Richards, Wellington, Kans.; T. T. Godfrey, Medford, Okla.; L. H. Simmons, Billings, Okla.; F. E. Barnhill, Nardin, Okla.; A. H. Deimington, Milan, Kans.

The Blue Island, Riverdale and Hammond Street Railway Company. Place of business, Oklahoma City, Okla. Capital stock, \$1,500,000. Incorporators, August N. Miller, William R. Owen, John F. Noel, Frank E. White, W. S. McCaull, all of Chicago, Ill.; W. F. Harn, T. F. McMechan, John Threadgill, all of Oklahoma City, Okla.

The Cheyenne and Washita Valley Railway Company. Place of business, Cheyenne, Okla. Capital stock, \$250,000. Incorporators, H. D. Cox, John B. Harrison, A. L. McKinney, A. L. Thurmond, Milo Burlingame, G. W. Hodges, J. W. McMurtrey, W. A. Beaty, A. O. Miller, L. L. Collins, J. P. Johnson, all of Cheyenne, Okla.

The Chickasaw and Northeastern Railway Company. Place of business, Chickasha, Ind. T. Capital stock, \$5,000,000. Incorporators, John Larasy, Sacred Heart, Okla.; W. S. Search, Wanette, Okla.; R. E. Wood, Richard A. Timmons, H. H. Maxey, B. F. Mann, C. J. Benson, all of Shawnee, Okla.; Charles F. Reichert, Asher, Okla.

The Dominion and Gulf Railroad Company. Place of business, Pond Creek, Okla. Capital stock, \$50,000,000. Incorporators, J. A. Koontz, Hutchinson, Kans.; W. O. Jones, Wakita, Okla.; F. C. Spaulding, Kansas City, Mo.; A. H. McMahan, Sand Creek, Okla.; J. H. Ledgerwood, Pond Creek, Okla.

Denver, Woodward and Southeastern Railway Company. Place of business, Woodward, Okla. Capital stock, \$20,000,000. Incorporators, E. S. Wiggins, J. W. Magee, F. M. Cline, L. B. Collins, John J. Gerlach, A. M. Applegate, H. C. Thompson, John Garvey, C. E. Sharp, J. H. Hopkins, B. W. Key, all of Woodward, Okla.

Guthrie, Fairview and Western Railroad Company. Place of business, Guthrie, Okla. Capital stock, \$13,500,000. Incorporators, W. S. McCaull, Joliet, Ill.; J. G. Trimble, L. Underwood, C. B. Kelsea, Charles L. Hill, George C. Cowles, all of Kansas City, Mo.; W. F. Bort, Kingfisher, Okla.; J. W. McNeal, Horace Speed, Guthrie, Okla.



The Great Eastern and Western Railroad Company. Place of business, Oklahoma City, Okla. Capital stock, \$10,000,000. Incorporators, Seymoor C. Heyman, E. E. Brown, J. M. Owen, M. M. Harrell, all of Oklahoma City, Okla.

The Kansas City, Oklahoma and Houston Railway Company. Place of business, Guthrie, Okla. Capital stock, \$15,000,000. Incorporators, Scott McVeigh, Chicago, Ill.; R. P. McGeehan, James E. Gregg, Kansas City, Mo.; P. W. Bean, Don C. Smith, Guthrie, Okla.; Lewis T. Rankin, Athens, Ill.

The Kansas, Elk City and Texas Railway Company. Place of business, Elk City, Okla. Capital stock, \$2,000,000. Incorporators, P. C. Hughes, Charles McCloud, E. R. Hughes, E. M. Seannell, C. F. Patterson, I. C. Thurmond, all of Elk City, Okla.

The Missouri and Oklahoma Central Railroad Company. Place of business, Guthrie, Okla. Capital stock, \$5,000,000. Incorporators, Adelbert Hughes, Thomas J. Lowe, Henry F. Burt, Frank Dale, A. G. C. Bierer, all of Guthrie, Okla.

The Oklahoma and Cherokee Central Railroad Company. Place of business, Guthrie, Okla. Capital stock, \$2,000,000. Incorporators, W. D. Todd, E. E. Allen, A. G. Todd, P. W. Wilkins, all of Warren, Pa.; H. M. Adams, Chelsea, Ind. T.; A. M. Gammon, Corning, N. Y.; Robert Sohlberg, George M. Green, C. R. Havighorst, all of Guthrie, Okla.

The Oklahoma, Roswell and White Mountain Railroad Company. Place of business, Oklahoma City, Okla. Capital stock, \$5,000,000. Incorporators, James A. Ryan, Christian Lorengen, John W. Graves, William T. Graves, Samuel P. Stanford, O. S. Russell, S. A. Byers, George W. Clark, John C. Leeper, all of Oklahoma City, Okla.; John S. Lenox, Isibud B. Rose, John M. Russell, all of Roswell, N. Mex.; Benjamin J. Clardy, Shawnee, Okla.; William W. Pyles, Mounds, Ind. T.

The Oklahoma City Railway Company. Place of business, Oklahoma City, Okla. Capital stock, \$1,000,000. Incorporators, Charles W. Ford, D. J. Johnson, W. E. Moore, William A. Wells, Henry M. Braner, W. J. Faulkner, J. Lamb, all of Oklahoma City, Okla.

The Oklahoma City, Lexington and Sulphur Springs Electric Railway Company. Place of business, Lexington, Okla. Capital stock, \$1,000,000. Incorporators, Charles Stewart, Parkersburg, W. Va.; H. A. Hawk, J. S. Little, H. L. Forehand, E. Duffy, Jay Sherman, W. J. Reed, E. J. Keller, Robert E. Thacker, George A. Teague, A. Hutchin, F. P. Mosley, all of Lexington, Okla.

The South McAlester, Red River and Gulf Railroad Company. Place of business, Guthrie, Okla. Capital stock, \$2,000,000. Incorporators, H. H. Kirkpatrick, W. S. Heinmer, F. H. Kellogg, all of South McAlester, Ind. T.; Don C. Smith, Guthrie, Okla.

The Shawnee and Northeastern Railway Company. Place of business, Shawnee, Okla. Capital stock, \$500,000. Incorporators, A. E. Nelson, W. N. Maben, D. N. Bell, C. W. Kerfoot, Shawnee, Okla.

#### COMMERCE.

The statements of the different railroads which follow present certain facts relative to the commerce of the Territory, which, while not as complete as might be desired, as some lines of railway have failed to forward a list of their shipments, shows a very extensive business for a country so young.

Our wheat and flour having a world-wide reputation, our cotton going to eastern mills for manufacture, our live stock, which is marketed in the large cities where the packing houses are located, our cement and plaster, which has been used so extensively in the construction of the buildings of the St. Louis exposition, our pressed and vitrified paving brick, our red granite, our peaches and other fruits, products of the tree and vine, all require transportation from their place of manufacture or production to points outside our borders, and the various lines of traffic are often congested with the large amount of business given them.

The incoming shipments are equally as interesting. The large number of carloads of farm machinery, implements, and vehicles, together with immigrant movables, make it evident that the success of the agriculturist in Oklahoma has necessitated his securing all that is latest and best in machinery and implements, and that many in other States are seeking to better their conditions by coming to this prosperous land.

#### ATCHISON, TOPEKA AND SANTA FE RAILWAY.

Statement showing number of carloads of freight forwarded from and received at stations on its line in Oklahoma during the year ending June 30, 1904.

Forwarded:	Carloads.
Cattle -----	4, 631
Hogs -----	1, 209
Sheep -----	30
Horses -----	141
Wheat -----	6, 429
Corn -----	566
Oats -----	65
Cotton seed -----	62
Hay -----	160
Melons -----	9
Cotton (number of bales, 28,230) -----	474
Other mill stuff -----	202
Flour -----	653
Total -----	14, 631
Received:	
Farm machinery and implements -----	456
Vehicles -----	121
Emigrant movables -----	506
Coal -----	3, 029
Flour -----	953
Total -----	5, 065

#### CHICAGO, ROCK ISLAND AND PACIFIC RAILWAY.

Statement showing number of carloads of freight forwarded from and received at stations on its line in Oklahoma during the year ending June 30, 1904.

Forwarded:	Carloads.
Cattle -----	2, 564
Hogs -----	1, 132
Sheep -----	8
Horses -----	250
Wheat -----	8, 845
Corn -----	216
Oats -----	233
Castor beans -----	9
Cotton seed -----	871
Hay -----	325
Melons -----	37
Flour -----	4, 402
Other mill stuffs -----	1, 218
Cotton (in bales) -----	155, 000
Received:	
Farm machinery and implements -----	574
Vehicles -----	164
Flour -----	1, 177
Emigrant movables -----	521
Coal -----	5, 683

## ST. LOUIS AND SAN FRANCISCO RAILWAY.

Statement showing number of carloads of freight forwarded from stations on its line in Oklahoma during the year ending June 30, 1904.

Stations.	Cattle.	Hogs.	Sheep.	Horses.	Wheat.	Corn.	Oats.	Castor beans.	Cotton seed.	Melons.	Flour.	Mill stuff.	Total.	Cotton.	
														Square bales.	Round bales.
Middleton	6	2			47	1							50		
Peckham	28	11			221	1	4	1					296		
Blackwell	39	1		8	357	13	7				280	122	827		
Retta					14								23		
Eddy	19	4		2	87	8	1						113		
Lamont	51	81		1	200							1	334		
Saltfork	9	13			109								131		
Hunter	36	20		1	339						1		397		
Breckinridge	31				123						8	2	164		
Enid	30			26	358	3					74	58	549		
Drummond	18	23			130	4	1				122	55	353		
Ames	32	12			134								179		
Okeene	13	7		2	187	1					46	25	281		
Carleton	24	8			109								141		
Eagle City	22	10	2	2	105	9			6				156	5	
Fay	12				32						1		45		
Thomas	28	34		4	161	3	2		3		75	53	363	349	
Custer City	72	69		1	190	1	2	2	15		5	16	373	1,278	
Arapahoe	86	44		8	39	4	2		22				205	1,109	
Washita Junction		1			1	1			8		17	15	43		
Bessie	31	4			104		1						141	159	
Cordell	99	28		4	133				44		63	19	390	3,466	
Rocky	2			1	113		11		26				153	1,888	
Hobart	18	1		2	9				270		38	21	359	18,887	
Roosevelt	17				23	1						1	42		
Mountain Park					1				2		1		4	145	
Snyder	16			5	9	1			12				43	1,683	
Siboney						1			11				12	791	
Frederick	120			1	40	3	25		16		1		206	1,936	
Davidson	10			1	33	4	14		18				80	1,344	
Keystone	5	2				5			5				17	260	
Terlton	3	9		1	1	3			3				20	59	
Greenup	10	4											14		
Casey	2												2		
Pawnee	6	11		2	7	3					8	9	46		
Morrison	21	19		3	32	5							81		
Sumner					4								4		
Perry				2	87				2				205		
Lucien		4		1	5						89	25	10		
Covington	20	1			45								66		
Carrier					44	1							45		
Goltry	8	12			37								57		
Helena	1				23		2						26		
Avard	3			1									4		
Stroud	59	17	1	5	60		2		65	1			210	1,267	4,073
Davenport									1				1	115	
Chandler	47	10		3		1		3	60		1	6	131	4,942	3,801
Wellston	4	7		2	2	2			40		1		58	2,391	1,310
Luther	11	5			24				37		1		78	1,005	131
Ludlow						1							1		
Jones City	5	2		2	34	23			18				84	797	
Spencer	10	4	2		35				5			1	57	188	
Oklahoma City	44			18	17	3			18	1	247	53	401	1,549	
Wheatland	4	4			127		6				1		142		
Mustang		3		5	28	8	8		1	2			55	6	
Allie						1							1		
Laverty						6			8	2		1	17	378	
Cement	31	2						1	24	5	1		64	459	
Cyril	5												5		
Elgin	5	1			24				2	1		20	53	65	
Fort Sill	5			1		1							7		
Lawton	13			8	5	1	1		11		4	17	60	761	
Cache	2												2		
Indianahoma	25			1					21		1		26		
Headrick					4	8							34	1,494	
Altus	7	1	3	6	12	93	1		167	1	5	5	301	8,397	
Eldorado	14	5			2	3			63				88	4,809	
Olustee	3			5	11	4	19		24				66	2,089	
Guthrie				3	1				13		34	4	55		
Low						1							1		
Total	1,240	496	8	138	4,081	126	213	9	1,041	13	1,125	534	9,024	64,250	9,315



## ST. LOUIS AND SAN FRANCISCO RAILWAY.

*Statement showing number of carloads of freight received at stations on its line in Oklahoma during the year ending June 30, 1904.*

Stations.	Farm machinery and imple- ments.	Vehicles.	Emi- grant goods.	Coal.	Flour.	Total.
Peckham	2		8	73	1	84
Blackwell	6	1	12	176	1	196
Eddy			5	26		31
Lamont	2	3	5	47	20	77
Salt Fork	4		3	18		25
Hunter	4	3	6	60	1	74
Breckinridge			1	12		13
Enid	13	2	12	284	4	315
Drummond	5		3	39		47
Ames	1		1		2	4
Okeone	8	3	7	38		56
Carleton			1	2	1	4
Eagle City			3	8	11	22
Thomas	6	3	9	50	6	74
Custer City	12	6	14	61	1	94
Arapahoe	7	2	5	56	3	73
Washita Junction	3	5	2	9	15	34
Bessie		1	3	9	2	15
Cordell	7	6	12	95	21	141
Rocky	4	2	3	47	7	63
Hobart	3	5	15	85	12	120
Roosevelt	2	1	5	13	22	43
Mountain Park	1		4	6	16	27
Snyder	4	2	10	32	32	80
Siboney	1	1	3	24	14	43
Frederick	16	1	13	58	35	123
Davidson	2		1	16	12	31
Stroud	6	7	15	54	62	144
Davenport			2			2
Chandler	3		16	80	49	148
Wellston	2	2	3	5	17	29
Luther	4	2	2	8	2	18
Jones City	2		2	5	5	14
Munger	2	6			1	9
Oklahoma City	20	11	34	631	4	700
Wheatland	1			12		13
Mustang			2	11		13
Laverty					1	1
Cement	1		6	2	17	26
Fletcher			1			1
Elgin	2		3	10	8	23
Fort Sill				1		1
Lawton	13	4	4	73	11	105
Cache			1		6	7
Indianahoma			4		7	11
Headrick	3		4	22	26	55
Altus	19	6	21	170	38	254
Olustee	6	4	5	47	13	75
Eldorado	8	1	6	135	31	181
Guthrie	1	1	5	135	1	143
Keystone	1		3		4	8
Terlton					5	5
Greenup			1	1	4	6
Pawnee	2	1	3	36	6	48
Morrison			3	11	3	17
Perry	1	4	4	86		95
Lucien		2		7		9
Covington			1	21	1	23
Fairmont				1		1
Carrier	1			6		7
Goltry	1			7		8
Helena	2		1	2		5
Carmen	1	1		2	1	5
Total	215	99	318	2,925	562	4,119

## MISSOURI, KANSAS AND TEXAS RAILWAY.

*Statement showing number of carloads of freight forwarded from stations on its line in Oklahoma during the year ending June 30, 1904.*

Stations.	Cattle.	Hogs.	Horses.	Wheat.	Corn.	Oats.	Cotton seed.	Cotton, bales.	Flour.	Other mill stuff.	Total.
Agra .....	1	7	-----	44	-----	-----	10	485	-----	-----	547
Arcadia .....	-----	6	-----	12	-----	-----	26	995	-----	-----	1,039
Cushing .....	9	11	-----	-----	-----	-----	3	-----	-----	-----	23
Cleveland .....	1	20	1	-----	8	-----	2	50	-----	-----	82
Carney .....	1	1	-----	-----	-----	-----	23	1,539	1	-----	1,564
Guthrie .....	1	-----	-----	7	-----	-----	-----	-----	17	1	26
Fallis .....	-----	12	-----	-----	-----	-----	36	1,998	-----	-----	2,047
Jennings .....	-----	2	-----	-----	-----	-----	2	63	-----	-----	67
Luther .....	9	6	-----	-----	-----	-----	12	826	-----	-----	853
Meridian .....	-----	-----	-----	-----	1	-----	-----	7	-----	-----	8
Nelagony .....	13	3	-----	-----	-----	-----	-----	-----	-----	-----	16
Oklahoma City .....	35	-----	-----	-----	-----	1	8	2,549	56	1	2,654
Osage .....	9	-----	-----	-----	2	-----	-----	-----	-----	-----	11
Tyron .....	1	-----	-----	5	8	-----	9	417	-----	-----	440
Yale .....	-----	2	-----	-----	-----	-----	-----	-----	-----	-----	2
Witcher .....	-----	-----	-----	6	-----	-----	2	117	-----	-----	125
Total .....	80	70	1	74	19	1	133	9,046	74	2	9,500

## MISSOURI, KANSAS AND TEXAS RAILWAY.

*Statement showing number of carloads of freight received at stations on its line in Oklahoma during the year ending June 30, 1904.*

Stations.	Implements and machinery.	Vehicles.	Emigrant outfits.	Coal.	Flour.	Total.
Agra .....	3	-----	5	2	2	12
Arcadia .....	2	-----	3	4	-----	9
Cushing .....	3	2	1	8	1	15
Cleveland .....	4	-----	1	2	7	14
Carney .....	-----	-----	4	5	12	21
Fallis .....	18	6	8	16	5	53
Guthrie .....	1	-----	-----	23	-----	24
Jennings .....	2	-----	5	1	1	9
Luther .....	2	-----	-----	1	1	4
Meridian .....	-----	-----	-----	-----	1	1
Maud .....	1	-----	-----	-----	3	4
Nelagony .....	2	-----	1	3	3	9
Newala .....	1	-----	-----	-----	-----	1
Oklahoma City .....	11	7	33	188	-----	239
Shawnee .....	-----	-----	1	16	-----	17
Tyron .....	1	-----	-----	-----	1	2
Witcher .....	-----	-----	1	1	-----	2
Yale .....	1	-----	-----	-----	1	2
Total .....	52	15	63	270	38	438

## THE KANSAS CITY, MEXICO AND ORIENT RAILWAY.

*Statement showing number of carloads of freight forwarded from and received at stations on its line in Oklahoma during the year ending June 30, 1904.*

## BYRON.

Forwarded:	Cars.	Received:	Cars.
Cattle .....	29	Implements and farm machinery .....	9
Hogs .....	77	Immigrant goods .....	1
Wheat .....	79	Coal .....	23
Melons .....	32	Flour .....	4
Horses .....	1	Lumber .....	24
		Brick .....	3

Statement showing number of carloads of freight forwarded, etc.—Continued.

CHEROKEE.			
Forwarded :	Cars.	Received :	Cars.
Cattle .....	58	Implements and farm machin- ery .....	18
Hogs .....	22	Vehicles .....	3
Wheat .....	278	Immigrant goods .....	6
Corn .....	1	Coal .....	96
Flour .....	3	Flour .....	5
Sugar .....	1	Lumber .....	94
Broom corn .....	1	Brick .....	27
Horses .....	1		

YEWED.			
Forwarded :	Cars.	Received :	Cars.
Cattle .....	46	Implements and farm machin- ery .....	3
Hogs .....	46	Coal .....	27
Wheat .....	151	Flour .....	4
Oats .....	1	Lumber .....	34
		Brick .....	2

CARMEN.			
Forwarded :	Cars.	Received :	Cars.
Cattle .....	47	Implements and farm machin- ery .....	17
Hogs .....	18	Vehicles .....	1
Wheat .....	259	Immigrant goods .....	7
Melons .....	1	Coal .....	96
Mules .....	1	Flour .....	10
Horses .....	1	Lumber .....	78
		Brick .....	79

ALINE.			
Forwarded :	Cars.	Received :	Cars.
Cattle .....	2	Immigrant goods .....	2
Hogs .....	1	Coal .....	1
		Flour .....	2

ORIENTA.			
Forwarded :	Cars.	Received :	Cars.
Cattle .....	7	Immigrant goods .....	3
Wheat .....	77	Coal .....	9
Broom corn .....	9	Lumber .....	26
Mules .....	3	Brick .....	4

FAIRVIEW.			
Forwarded :	Cars.	Received :	Cars.
Cattle .....	33	Implements and farm machin- ery .....	9
Hogs .....	5	Vehicles .....	3
Wheat .....	110	Immigrant goods .....	5
Flour .....	6	Flour .....	1
Broom corn .....	80	Coal .....	81
Mules .....	2	Lumber .....	81

LITTLE SANDY.			
Forwarded :	Cars.	Received :	Cars.
Melons .....			9

TOTAL.			
Forwarded :	Cars.	Received :	Cars.
Cattle .....	222	Implements and farm machin- ery .....	56
Hogs .....	99	Immigrant goods .....	19
Wheat .....	954	Coal .....	333
Melons .....	42	Flour .....	26
Horses .....	3	Lumber .....	337
Mules .....	6	Brick .....	124
Broom corn .....	90	Vehicles .....	7
Flour .....	9		



## FORT SMITH AND WESTERN RAILWAY.

*Statement showing number of tons of freight forwarded from stations on its line in Oklahoma during the year ending June 30, 1904.*

Station.	Grain.	Flour.	Other mill stuff.	Cotton seed.	Live stock.	Bales of cotton.
Prague.....	227			1,159	79	4,662
Sparks.....	51	568	73			
Warwick.....					60	
Fallis.....	20	55		99		115
Meridian.....	52			106	31	527
Guthrie.....	2,310	3,147	190	15	11	20
Total.....	2,660	3,770	263	1,379	181	5,324

## FORT SMITH AND WESTERN RAILWAY.

*Statement showing number of tons of freight received at stations on its line in Oklahoma during the year ending June 30, 1904.*

Station.	Farm machinery and implements.	Vehicles.	Emigrant goods.	Coal.	Flour.
Prague.....	12	38	66	254	509
Sparks.....	12		28	17,231	
Warwick.....			1		14
Fallis.....			44	652	27
Meridian.....			1		55
Guthrie.....			41	4,623	14
Total.....	24	38	181	22,763	619

## DENVER, ENID AND GULF RAILWAY.

*Statement showing number of carloads of freight forwarded from stations on its line in Oklahoma during the year ending June 30, 1904.*

## Forwarded:

Wheat.....	carloads	859
Cattle.....	do	76
Cotton seed.....	do	10
Hogs.....	do	24
Cotton.....	bales	229

## RAILWAY BUILDING.

The increase in railroad mileage over that reported last year shows 689.44 miles built during the year. Much of this was the actual completion of several short lines which were unfinished at the beginning of the fiscal year.

Several new lines are projected, work is now in progress on two of them, and considerable work will be accomplished during the coming year.

The Kansas City, Mexico and Orient have 282 miles of completed grade on which they are now laying steel.

It is interesting to compare the railroad mileage of Oklahoma, the youngest Territory, with that of some of the older States.

According to the statistics of railways of the United States, prepared by the Interstate Commerce Commission, the 20 States having fewer miles than Oklahoma are Connecticut, Rhode Island,

Delaware, Idaho, Louisiana, Maine, Maryland, Massachusetts, Mississippi, Nevada, New Hampshire, New Jersey, North Dakota, Oregon, South Carolina, South Dakota, Utah, Vermont, West Virginia, and Wyoming. Oklahoma has a larger total mileage than four of the States—Nevada, Delaware, Vermont, and Rhode Island—combined, according to the same authorities.

Of the total mileage in Oklahoma, 3,222.75, the 'Frisco, Rock Island and Choctaw, all conceded to be Rock Island lines, have a total of 1,739 miles of railroad, or more than the total mileage in 10 of the different States, or the combined mileage of the States of Rhode Island, Delaware, and Nevada. The Santa Fe, with its 713 miles, has more than the States of Rhode Island and Delaware combined, while the "Katy," with its 255 miles, or the Orient, two of Oklahoma's new lines, will, either one, surpass Rhode Island, one of the original thirteen States, in mileage.

A list of the improvements, additions, and extensions made by the various lines during the past year has been furnished me by the superintendents or other officials in charge.

#### ATCHISON, TOPEKA AND SANTA FE.

Mr. H. A. Tice, superintendent, states as follows:

I inclose a list of improvements made during the past year and of those in prospect for the coming year, this list showing approximate cost of such work. In addition to the attached list, there have been erected station buildings at all new stations on the line from Newkirk to Pauls Valley. The three gaps in the line, between Fairfax and Kaw City, 19 miles; between Truesdale and Tecumseh, 17 miles, and between Quay and Maramec, 8 miles, have all been closed up, and the line is now complete from Newkirk to Pauls Valley as it was originally planned.

All the stations on the line from Newkirk to Pauls Valley have been furnished with the usual station buildings, with the exception of Kaw, Fairfax, Skedee, Avery, and Sparks, where we have steel water tanks, and at Maramec, where we have steel water tank and gravity coal chute in addition to the usual station buildings. On the line from Arkansas City to Walker we have constructed 17,000 feet of side track during the last year.

#### *List of work done during the fiscal year ending June 30, 1904.*

Location.	Structure.	Approximate cost.
Newkirk.....	Brick platform.....	\$180
Black Bear.....	Interlocking plant with Arkansas Valley and Western.....	900
Perry.....	Concrete dam.....	4,000
Guthrie.....	New passenger depot (brick).....	40,000
	Street paving and sidewalks.....	4,620
	Brick platforms.....	1,200
Oklahoma City.....	New passenger depot (stone).....	35,500
	New freight depot (brick and frame).....	20,000
	Paving and sidewalks.....	12,500
Cimarron River.....	Interlocking plant (electric) with Missouri, Kansas and Texas. (Unable to advise cost of this plant.)	
Cody.....	Interlocking plant (mechanical) with Arkansas Valley and Western.....	900
Shawnee.....	Passenger depot (stone).....	27,000
	Freight depot (brick and frame).....	17,000
	Turntable.....	5,000
	Water plant.....	4,200
	Coal chute.....	7,000
	Two track scales (\$700 each).....	1,400

*List of work proposed for fiscal year ending June 30, 1905.*

Location.	Structure.	Approximate cost.
Kildare .....	Depot platform (brick) .....	\$320
Red Rock .....	do .....	320
Perry .....	Addition to brick platform .....	500
	Gravity coal chute (12 pockets) .....	6,000
	Cotton platform .....	500
Red Rock .....	Depot platform (brick) .....	320
Edmond .....	do .....	320
Orlando .....	do .....	320
Mulhall .....	do .....	320
Sparks .....	Interlocking plant (mechanical) with Fort Smith and Western .....	1,526
Guthrie .....	New dam in Cottonwood Creek .....	2,000
Shawnee .....	Roundhouse (16 stalls) .....	23,000
	Two cinder pits (\$1,000) .....	2,000
	Ice house .....	2,000
	Office building .....	3,000

## CHICAGO, ROCK ISLAND AND PACIFIC RAILWAY.

H. G. Clark, division engineer, reports the following:

During the past year this company has relaid with 80-pound rail 6.65 miles of main track between Shawnee and Dale, and have constructed 2.01 miles of main track, together with several thousand feet of sidings, at El Reno, in order to provide for the joint facilities at that point. We have constructed 36,085 feet of passing and industrial tracks in Oklahoma Territory to handle the increasing business. New depot buildings have been built at Weatherford, and numerous additions made to present structures at various points. We have also constructed numerous stock pens and enlargements have been made to others.

We have ballasted about 18 miles of main track with gumbo, and about 25 miles of track with stone ballast, and have replaced 7,792 lineal feet of pile trestles. We have constructed a steel viaduct across the right of way at Oklahoma City at a cost of about \$30,000, and completed masonry work for a bridge across the North Canadian River at Shawnee to cost about \$20,000.

The contemplated improvements for the coming year will include the following:

Reballasting the main line from the Indian-Oklahoma Territory line to El Reno, and in connection with this work a large amount of grading will be required in preparation. Expect to relay with 80-pound rail the gap of 32 miles between Dale and Oklahoma City, also relay with 80-pound steel the main track between Oklahoma City and El Reno. We are contemplating the construction of new steel bridges at various important stream crossings, and the rebuilding of about 8,000 feet of pile trestles on the western portion of the line. Important and expensive improvements at Shawnee in connection with the water supply, and the establishing of water treating plants at several stations in the western part of the Territory, have been recommended; and some consideration has also been given to the erection of modern freight terminals at Shawnee, Oklahoma City, and El Reno.

## ST. LOUIS AND SAN FRANCISCO RAILWAY.

Mr. Alexander Douglas, fourth vice-president and general auditor, states as follows:

The new mileage constructed in Oklahoma during the fiscal year ended June 30, 1904, was as follows: State line to Avarad, 151.35 miles.

## MISSOURI, KANSAS AND TEXAS.

A. A. Allen, vice-president and general manager, has caused the following information to be furnished:

Main track laid during year, 203.1 miles; 31.9 miles of sidings constructed. Twenty-six spans of steel bridges, ranging in length from 34 feet to 175 feet, have been erected.



Station buildings have been built on the Oklahoma division at Hominy, Osage, Cleveland, Yale, Cushing, Agra, Tyron, Carney, Fallis, Luther, Arcadia, Witcher, Meridian, Guthrie, and Oklahoma City. All but the last-named are frame constructions. At Oklahoma City a frame freight depot and two-story stone passenger station were built.

On the Tulsa and Shawnee divisions frame station buildings were built at Dixie, Hotulke, Shawnee, Newalla, and Marion.

Brick roundhouses have been built at Osage with eight stalls, Oklahoma City five stalls, and Guthrie two stalls.

Gravity coal chutes have been built at Osage and Oklahoma City.

#### KANSAS CITY, MEXICO AND ORIENT.

Mr. M. P. Paret, chief engineer, sends the following information :

During the fiscal year ending June 30, 1904, our company has done the following work in Oklahoma :

Completed the grading from Washita River south about 28 miles and also completed the grading from a point about 26 miles south of the Cimarron River to a point about 30 miles south of the Cimarron River.

We have also during that period laid main line track for 11 miles, beginning at the Cimarron River and extending southward, and at the town sites of Orienta, Yewed, Fairview, and Cherokee we have laid sidings to the extent of about 2.8 miles.

We have also fenced about 10 additional miles of our line in Oklahoma.

We have erected a depot at Orienta and are now erecting a depot at Fairview.

We have erected stock pens at Fairview, Orienta, and Aline.

We have established a water tank and water station just north of the Cimarron River ; we have also built a dam at Fairview, which has impounded a large supply of water for railroad and town site purposes.

#### FORT SMITH AND WESTERN.

Mr. J. J. Mahoney, general manager, furnishes the following :

Since June 30, 1903, we have built in Oklahoma 61.54 miles of main track and about 8 miles of sidings. Have constructed station buildings, section houses, etc., at Prague, Sparks, Warwick, Fallis, and Meridian. Erected coaling station at Prague, water stations at Sparks, Fallis, and Guthrie.

#### DENVER, ENID AND GULF.

Mr. Ed L. Peckham, vice-president and general manager, reports as follows concerning improvements :

We have, since January 1, 1904, added to our line between Enid and Guthrie the following sidings :

Siding :	Feet.
Corwin .....	1, 220
Lovell .....	1, 314
Vance spur .....	609
Gas house spur, Enid .....	745

We have our line located from Enid northwest to Kiowa, Kans., and will probably build during the present year at least 50 miles of same.

#### ST. LOUIS, EL RENO AND WESTERN.

Mr. T. L. Wolf, auditor and traffic manager, furnishes the following memoranda :

	Miles.
Length of our main line in Oklahoma .....	42. 21
Length of side track .....	3. 81

We have combination freight and passenger depots located at Navina, Lockridge, Piedmont, and Richland, and separate passenger and freight depots at El Reno.

*Railroad mileage in Oklahoma.*

Railway.	Main track.	Side track.	Grade.	Total.
Atchison, Topeka and Santa Fe .....	610.83	103.12	.....	713.95
Chicago, Rock Island and Pacific .....	512.00	60.95	.....	572.95
Choctaw and Northern .....	121.59	12.74	.....	134.33
Choctaw, Oklahoma and Gulf .....	237.79	53.76	.....	291.55
St. Louis and San Francisco .....	664.45	75.70	.....	740.15
Missouri, Kansas and Oklahoma .....	236.45	18.68	.....	255.13
Kansas City, Mexico and Orient .....	58.07	7.07	282.55	347.69
St. Louis, El Reno and Western .....	39.53	.68	.....	40.21
Fort Smith and Western .....	61.53	4.25	.....	65.78
Denver, Enid and Gulf .....	55.68	5.33	.....	61.01
Total .....	2,597.92	342.28	282.55	3,222.75

*Railway mileage, by counties.*

County.	Main track.	Side track.	Grade.
Beaver .....	55.57	4.65	.....
Blaine .....	113.40	11.14	30.43
Caddo .....	127.92	12.03	.....
Canadian .....	92.14	17.18	.....
Cleveland .....	21.63	3.58	.....
Comanche .....	151.91	15.45	.....
Custer .....	70.88	9.00	30.06
Day .....	3.78	.....	.....
Dewey .....	2.48	1.00	16.23
Garfield .....	169.09	18.32	.....
Grant .....	81.66	8.44	.....
Greer .....	74.85	5.27	72.35
Kay .....	118.64	22.85	.....
Kingfisher .....	46.51	6.21	.....
Kiowa .....	101.97	10.74	49.45
Lincoln .....	177.37	20.70	.....
Logan .....	169.46	26.16	.....
Noble .....	72.83	14.16	.....
Oklahoma .....	151.78	34.23	.....
Pawnee .....	185.23	18.82	.....
Payne .....	90.10	12.27	.....
Pottawatomie .....	125.69	27.33	.....
Roger Mills .....	21.36	6.68	.....
Washita .....	39.67	7.90	67.20
Woods .....	266.78	20.35	16.83
Woodward .....	65.72	7.81	.....
Total .....	2,597.92	342.28	282.55

Total railroad mileage, including graded right of way, 3,222.75.

*Assessed valuation of railroad property.*

Beaver .....	\$200,239	Kiowa .....	\$403,424
Blaine .....	463,140	Lincoln .....	653,405
Caddo .....	549,455	Logan .....	731,765
Canadian .....	520,971	Noble .....	404,751
Cleveland .....	157,152	Oklahoma .....	788,970
Comanche .....	571,557	Pawnee .....	629,850
Custer .....	285,756	Payne .....	365,158
Day .....	15,800	Pottawatomie .....	532,284
Dewey .....	11,014	Roger Mills .....	112,922
Garfield .....	700,375	Washita .....	168,522
Grant .....	381,312	Woods .....	1,040,446
Greer .....	310,893	Woodward .....	297,285
Kay .....	546,915		
Kingfisher .....	266,306	Total .....	11,109,667

## MANUFACTURING.

It is a noticeable fact that in all reports received from cities and towns in the Territory the manufacturing enterprises are increasing in number. The raw material is abundant. The labor is easily obtained, and the shipping facilities are equal to many older cities in the East. Capital is becoming interested. Cotton and paper mills are among the newer acquisitions, while canning factories, creameries, and cheese factories are becoming more common. Of course the flour milling industry leads all others, not only in numbers but in capital invested. Brick manufactories, both common, pressed, and vitrified, gypsum-plaster manufactories, salt works, foundries, structural-iron works, sash, door, and blind manufactories, and many others that might be mentioned, are employing large numbers of men and doing profitable business.

## FLOUR MILLS.

Few people realize the importance of the milling industry in Oklahoma. It stands at the head of our great manufacturing industries, consuming immense quantities of wheat and providing the staple food stuff for the people.

A large portion of the wheat grown in Oklahoma is ground by home mills. There are at present 63 mills that have an average daily (twenty-four hours) capacity of 10,000 barrels. If they grind but three hundred days during the year, they will require 13,702,000 bushels of wheat.

The by-products from these mills always meet with a ready sale at home for feeding stock.

These mills are modern and equipped with the latest type of machinery. Nearly all are using steam power, as it is found to be the most reliable and efficient. Water power, while obtainable in many instances, requires considerable outlay in dams and repairs and is not constant.

Mr. C. V. Topping, secretary and manager of the export and traffic department of the Oklahoma Millers' Association, states as follows:

There are, in round numbers, \$2,000,000 invested in milling plants. The object of the millers' association has been the securing of equitable freight rates on grain and grain products for our Territory, cheap rates on fuel, the handling of surplus flour to foreign countries, and the building up of the milling industry of Oklahoma.

Through the efforts of our association we have established an excellent export trade. During the last six months our exports from Oklahoma amounted to over 30,000,000 pounds of flour, and this was at the time of year when our wheat was above an export basis. Considering this fact, we think it is an excellent showing.

Our flour stands next to the finest Hungarian flour in the foreign markets.

The milling journals, in an article from the London Exchange, stated that the Oklahoma flours have a superior bloom or richness unequalled by any except the finest Hungarian patents.

We have taken great pride in keeping our mills in the front ranks and spare no expense to do so, and when you realize that we have over \$2,000,000 invested, it shows for itself that the milling industry of Oklahoma is keeping pace with and leading every other industry.

In the past year we have, through our association, secured a 50 per cent reduction in the freight rates on grain and grain products within Oklahoma and Indian Territory. Have also secured a big reduction on fuel, and feel that we



have done more toward the upbuilding of this Territory than all of the other industries combined.

These conditions can not be accomplished single handed. It requires the united action of all, and this is the object of our association.

The following is a complete list of the flouring mills now in operation in the Territory, showing name of operator and capacity of each:

Location.	Operator.	Capacity per day.
		<i>Barrels.</i>
Anadarko.....	Anadarko Milling Co.....	300
Alva.....	Alva Roller Mills.....	300
Augusta.....	J. A. Allen.....	100
Blackwell.....	Blackwell Milling and Elevator Co.....	500
Blackburn.....	Blackburn Mills.....	100
Chandler.....	Lincoln County Mills.....	100
Cherokee.....	Cherokee Milling Co.....	150
Cordell.....	Cordell Gin and Mill Co.....	350
Crescent City.....	Crescent Milling Co.....	40
Cushing.....	Betner and Allis.....	40
Dover.....	Dover Rolling Mills.....	100
Drummond.....	Drummond Mill and Elevator Co.....	150
Edmond.....	Snyder Rolling Mills.....	100
Do.....	Eagle Mills.....	100
El Reno.....	El Reno Mill and Elevator Co.....	400
Do.....	Canadian County Mill and Elevator Co.....	400
Enid.....	Enid Mill and Elevator Co.....	400
Do.....	Garfield County Mill and Elevator Co.....	150
Do.....	Farmers' Mill and Elevator Co.....	150
Fairview.....	Fairview Milling Co.....	100
Foss.....	Foss Milling Co.....	100
Garber.....	Garber Milling Co.....	75
Geary.....	Geary Milling and Elevator Co.....	200
Guthrie.....	Guthrie Milling Co.....	200
Do.....	Model Roller Mills.....	150
Harrison.....	Harrison Mill and Elevator Co.....	100
Hennessey.....	Hennessey Roller Mills.....	150
Hitchcock.....	Hitchcock Roller Mills.....	100
Hennessey.....	Farmers' Milling Co.....	200
Hobart.....	Hobart Mill Co.....	300
Independence.....	Independence Roller Mills.....	100
Ingersoll.....	Ingersoll Roller Mills.....	100
Jefferson.....	Jefferson Milling Co.....	100
Kaw City.....	Kaw City Mill and Elevator Co.....	100
Kingfisher.....	Kingfisher Mill and Elevator Co.....	300
Do.....	Oklahoma Mill Co.....	400
Lamont.....	Cross Brothers.....	50
Leger.....	Leger Mill Co.....	200
Luther.....	Luther Milling Co.....	100
Manchester.....	Manchester Milling Co.....	100
Mangum.....	Mangum Mill and Elevator Co.....	100
Marshall.....	Marshall Mill and Elevator Co.....	100
Medford.....	Medford Mill and Elevator Co.....	250
Meno.....	Meno Milling Co.....	75
Mulhall.....	Mulhall Roller Mills.....	100
Newkirk.....	Newkirk Milling Co.....	200
Norman.....	Norman Milling and Grain Co.....	150
Okarche.....	Okarche Roller Mills.....	100
Okeene.....	Okeene Roller Mills.....	150
Do.....	Oklahoma Mill and Elevator Co.....	100
Oklahoma City.....	Oklahoma City Mill and Elevator Co.....	300
Do.....	Acme Milling Co.....	400
Do.....	Plainsifter Milling Co.....	250
Pawnee.....	Pawnee Mill Co.....	150
Pawhuska.....	W. S. Mathers & Co.....	100
Perry.....	Perry Mill Co.....	300
Pond Creek.....	Pond Creek Mill and Elevator Co.....	300
Ponca City.....	Ponca City Milling Co.....	200
Shawnee.....	Shawnee Roller Mills.....	175
Stillwater.....	Thomas & Plummer.....	150
Taloga.....	Taloga Mill Co.....	100
Thomas.....	Thomas Milling Co.....	300
Tonkawa.....	Tonkawa Milling Co.....	100
Yukon.....	Yukon Mill and Grain Co.....	150
Watonga.....	Watonga Milling Co.....	100
Waukomis.....	Waukomis Milling Co.....	50
Weatherford.....	Weatherford Milling Co.....	150
Total aggregate capacity.....	.....	11,655

Mr. C. F. Prouty, secretary of the Grain Dealers' Association of Oklahoma and Indian Territory, speaks as follows relative to this wheat crop and the objects of the association:

There are 400 elevators with an average capacity of 10,000 bushels belonging to association members in these Territories. To give an estimate of the crop of 1904 and acreage as compared to last year is somewhat indefinite as to meaning and a matter of much speculative opinion after all, since there is no systematic gathering of statistical information in force in either of the Territories. No doubt there are thousands of acres in the newer counties and various portions of the Territories that are planted to crops for the first time. Railroads branching out and multiplying so rapidly within the past year are indirectly responsible for the thousands of acres of diversified crops now growing on heretofore uncultivated lands.

My duties as secretary of the Grain Dealers' Association are confined principally to grain interests, and more especially wheat, in territory touched by the Rock Island, Choctaw, Frisco, and Santa Fe systems, and I am quite frequently along these various routes of travel in the older settled districts of Oklahoma proper. It is my observation that the wheat acreage in this particular section referred to is some less than it was a year ago, and not more than half as good a crop in both quality and yield, some portions having an excellent yield of very good wheat, while in other sections the crop is a total or almost total failure. I judge the Territory has not produced this year to exceed 12,000,000 to 15,000,000 bushels of wheat. The oats crop this year is very poor as to both quality and yield, but the corn crop is the largest and most promising Oklahoma has had in its history. The same might be said of other crops, such as Kaffir corn, sorghum, broom corn, cotton, and hay.

The Grain Dealers' Association is an organization composed principally of regular grain buyers at local stations and owners of mills and elevators, and is organized for mutual cooperation and benefit by demanding of grain receivers a uniform system of grades and a scale for prices of off-grades, establishing official inspection and check-weight bureaus, adopting certain well-defined rules regarding scales and purchases, confirmations, conditions, etc., that shall govern differences in settlement that come up for arbitration before a selected board of arbitration to whom such differences are submitted; to report and inquire into freight-rate inequalities, irregularities, discriminations, etc., if any should occur; to solicit special rates for certain localities or better markets where better prices can be procured, but in no way or manner does the association put any restrictions or limitations upon any member, except as noted by our published constitution and by-laws.

*List of elevators in Oklahoma.*

Location.	Number of elevators.	Aggregate capacity.	Location.	Number of elevators.	Aggregate capacity.
		<i>Bushels.</i>			<i>Bushels.</i>
Alva .....	4	40,000	Cherokee .....	1	10,000
Arta .....	2	20,000	Carlton .....	1	10,000
Augusta .....	5	50,000	Carnegie .....	1	10,000
Ames .....	2	20,000	Cordell .....	2	20,000
Avery .....	1	10,000	Drummond .....	3	30,000
Apache .....	2	20,000	Dover .....	4	40,000
Anadarko .....	2	20,000	Deer Creek .....	2	20,000
Blackwell .....	4	120,000	Dixon .....	1	8,000
Braman .....	2	30,000	Douglas .....	2	20,000
Breckinridge .....	2	30,000	Driftwood .....	1	10,000
Bliss .....	2	20,000	Edmond .....	2	20,000
Billings .....	4	40,000	Enid .....	7	100,000
Bison .....	2	20,000	El Reno .....	5	230,000
Briton .....	1	10,000	Elk City .....	1	8,000
Cropper .....	3	35,000	Elgin .....	2	20,000
Coyle .....	1	10,000	Eagle City .....	2	20,000
Clyde .....	1	8,000	Foss .....	1	8,000
Cleo .....	3	30,000	Fairmont .....	2	20,000
Calumet .....	2	20,000	Fairfax .....	1	10,000
Cashion .....	3	30,000	Fort Cobb .....	1	10,000
Cereal .....	1	10,000	Geary .....	4	60,000
Carmen .....	1	10,000	Glencoe .....	2	16,000
Carney .....	1	10,000	Garber .....	4	45,000
Crescent .....	2	20,000	Guthrie .....	2	30,000

*List of elevators in Oklahoma—Continued.*

Location.	Number of elevators.	Aggregate capacity.	Location.	Number of elevators.	Aggregate capacity.
		<i>Bushels.</i>			<i>Bushels.</i>
Greenfield .....	2	16,000	Okarehe .....	4	50,000
Groveland .....	2	20,000	Okeene .....	4	50,000
Gruette .....	1	10,000	Orlando .....	1	10,000
Hunter .....	4	40,000	Oklahoma City .....	6	142,000
Homestead .....	3	30,000	Okonema City .....	4	110,000
Hutchbrook .....	3	35,000	Perkins .....	1	5,000
Hatfield .....	1	10,000	Perry .....	4	125,000
Hennessey .....	8	100,000	Pond Creek .....	5	50,000
Hinton .....	1	10,000	Pawnee .....	1	10,000
Independence .....	1	10,000	Peckham .....	1	10,000
Ingersoll .....	3	30,000	Parkersburg .....	1	10,000
Isabella .....	1	10,000	Quay .....	1	10,000
Jefferson .....	3	35,000	Reading .....	2	16,000
Kingfisher .....	8	150,000	Ripley .....	2	20,000
Kildare .....	2	10,000	Ringwood .....	2	20,000
Krenalin .....	3	30,000	Ruston .....	3	30,000
Kaw City .....	2	20,000	Redrock .....	3	30,000
Lamont .....	4	40,000	Rusk .....	1	8,000
Lahoma .....	4	40,000	Salton .....	3	24,000
Lawton .....	2	20,000	Saltfork .....	2	16,000
Leager .....	1	10,000	Stillwater .....	2	25,000
Leone Wolf .....	2	20,000	Temple .....	2	20,000
Manger .....	1	15,000	Thomas .....	2	20,000
Mulhall .....	2	25,000	Tonkawa .....	4	50,000
Moore .....	2	18,000	Union City .....	1	8,000
Manchester .....	3	30,000	Wakita .....	2	20,000
Milano .....	1	8,000	Walter .....	2	20,000
Medford .....	2	25,000	Watonga .....	3	30,000
Mangum .....	1	10,000	Waukomis .....	5	50,000
Marshall .....	3	30,000	Weatherford .....	3	35,000
Navina .....	2	16,000	Woodland .....	1	5,000
Noble .....	1	10,000	Wheatland .....	2	20,000
North End .....	1	30,000	Yukon .....	5	50,000
Norman .....	2	50,000			
Nardin .....	2	20,000			
Newkirk .....	3	35,000			
			Total .....	284	3,525,000

## PUBLIC HIGHWAYS.

[A. C. Titus, president Good Roads Association.]

Interest in the subject of good roads began to develop in Oklahoma in 1902, after the heavy rains of that spring had caused the rivers and creeks to overflow, wrecking and washing out bridges and doing much damage to highways, and seriously hindering traffic and travel on all country roads. There is no doubt but that what at the time seemed to be a general disaster will eventually prove to be a great blessing, for there were at least two valuable lessons pertinent to this matter taught the people of the Territory. One was the economy and wisdom of building permanent bridges and their superiority over cheap wooden structures, and the other was the importance of country roads and their relationship to all lines of business.

Few people living outside of Oklahoma are able to realize the rapid changes that are taking place along all lines of development, and there is little to wonder at that in the phenomenal growth of cities, the building of many hundred miles of railroads, and the intense commercial activity the people generally, even the farmers, did not realize that the improvement of the roads was not keeping pace with the general commercial needs and the rapid increase in the amount of farm products and supplies to be moved.

In the spring of 1902, owing to these conditions and a determination to remove obstacles in the way of the most rapid development



possible, the press and public-spirited citizens began advocating the doctrine of "good roads." Beginning with Logan County, good-roads associations were organized at a number of county seats. Pottawatomie County people seemed to take the most active interest in the subject, for they organized a local club in each municipal township. The movement has gained rapidly since its inception, and "good roads" has been given a place on the programmes of nearly all farmers' institute meetings. On April 1, 1904, a good-roads convention was held in Guthrie, attended by representative citizens from both Territories, at which was organized the Oklahoma-Indian Territory Good Roads Association. An interesting programme was carried out, concerning different phases of the good-roads questions, and resolutions were adopted indorsing the plan of "national and State aid and local cooperation in the permanent improvement of public highways," demanding the enactment of a law providing for the working of convicts and county prisoners on county roads; favoring county supervision in place of the present road-district system; providing for the appointment of a committee to act with a committee of the board of agriculture in revising Oklahoma's road laws; recommending the establishing of a short course of "rural engineering" in the Agricultural and Mechanical College and the University of Oklahoma; providing for the naming of a large delegation from both Territories to the International Good Roads Convention, at St. Louis, May 16-21, 1904; and extending thanks to the various individuals and other forces that had contributed to the success of the convention. The convention created an executive committee, composed of the president, vice-president, secretary, treasurer, and three members, of the association to be named by the president. Its duty is to direct the business affairs of the association and see that the counties and districts of the two Territories are properly organized.

#### SALE OF FARM LANDS.

Through the kindness of the recorders of the various counties, I have obtained some information relative to the sale of farm land during one month (April) of the past year. The figures are presented below in tabulated form. They indicate that the price of farm lands has a wide range, and the average for the entire number of acres transferred is \$15.50 per acre. Doubtless the cheap lands which are included are not suitable for agriculture. These should be eliminated in order to arrive at a fair estimate of the average price of agricultural land. Good farm lands with some improvements are selling for from \$15 to \$60, according to location, distance from market, and value of improvements.

Direct lines of railroad connect every county in the Territory with the leading markets, and as high prices are paid for farm products as in the Eastern or Central States.

Oklahoma farms raise a variety of crops, and the diversity of products enables the farmer to have something to sell in the markets during nearly every month of the year.

The winters are so mild and short that cotton picking and plowing are carried on at the same time. Wheat grows and furnishes pasture for stock in winter. The growing season being long, two crops

are frequently raised from the same soil during the year. The rainfall is abundant.

With the above-named prevailing conditions, it is little wonder that farm lands in Oklahoma are so much sought after by people desiring to better their condition.

County.	Number of sales.	Total acres transferred.	Total price paid.	Price per acre.		
				Lowest.	Highest.	Average.
Beaver .....	13	2,280	\$13,740	\$2.19	\$9.06	\$6.03
Blaine .....	49	4,417	45,318	.50	200.00	10.20
Caddo .....	21	1,150	30,215	-----	28.25	26.25
Canadian .....	21	3,043	79,260	8.00	46.25	26.00
Cleveland .....	41	1,638	25,676	4.50	62.00	15.65
Comanche .....	21	6,045	-----	.35	25.00	14.11
Custer .....	25	3,400	40,412	1.42	43.75	11.88
Day .....	4	471	4,000	6.25	9.37	8.47
Dewey .....	18	2,600	22,271	-----	-----	8.56
Garfield .....	34	4,520	116,980	10.50	51.00	25.88
Grant .....	21	3,080	68,300	7.50	37.50	22.22
Greer .....	41	6,026	82,432	10.00	125.00	13.50
Kay .....	100	1,480	72,295	12.00	337.00	50.00
Kingfisher .....	32	4,915	85,600	5.00	63.00	17.00
Kiowa .....	37	9,320	135,975	8.31	37.50	22.97
Lincoln .....	-----	5,460	87,500	10.00	25.00	16.67
Logan .....	38	2,404	82,327	8.00	250.00	34.24
Noble .....	-----	3,680	110,500	17.50	58.17	30.00
Oklahoma .....	-----	-----	-----	-----	-----	-----
Pawnee .....	17	2,109	33,725	6.25	28.13	15.98
Payne .....	23	2,850	48,000	5.00	57.00	16.85
Pottawatomie .....	-----	-----	-----	-----	-----	-----
Roger Mills .....	10	1,600	20,000	8.00	12.00	11.11
Washita .....	30	3,866	67,835	7.50	34.37	17.54
Woods .....	55	7,680	115,000	1.00	37.50	19.00
Woodward .....	-----	4,241	31,822	2.35	18.75	7.50

*Farm lands returned for taxation.*

County.	1900.	1904.	County.	1900.	1904.
	<i>Acres.</i>	<i>Acres.</i>		<i>Acres.</i>	<i>Acres.</i>
Beaver .....	112,859	193,914	Kiowa .....	-----	162,847
Blaine .....	22,165	241,066	Lincoln .....	152,538	447,181
Caddo .....	-----	136,962	Logan .....	348,775	438,843
Canadian .....	278,015	373,209	Noble .....	29,555	235,289
Cleveland .....	208,222	279,316	Oklahoma .....	390,953	386,859
Comanche .....	-----	332,251	Pawnee .....	9,115	174,931
Custer .....	19,906	279,727	Payne .....	248,600	379,508
Day .....	7,912	44,284	Pottawatomie .....	112,211	238,130
Dewey .....	8,000	154,539	Roger Mills .....	12,492	132,140
Garfield .....	140,664	543,206	Washita .....	21,000	321,967
Grant .....	104,426	477,737	Woods .....	83,469	939,303
Greer .....	106,191	516,033	Woodward .....	40,631	318,626
Kay .....	93,962	371,703	Total .....	2,875,704	8,661,945
Kingfisher .....	348,043	482,374			

TAXES.

The valuations placed on live stock of various kinds by the assessors is extremely low, as, for instance, sheep, \$1.18; swine, \$1.81; cattle, \$7.20; horses, \$15.73.

Farm lands have been listed at an average of \$3.54 per acre.

With such low valuations as these it can be readily understood why the rate of taxation is somewhat higher than in the States. It does not follow that the tax itself is high when the rate is high if the valuation is low.

The income from the Territorial levy will produce in the various counties the sums set opposite their names below:

Beaver -----	\$9,608	Kiowa -----	\$17,450
Blaine -----	12,125	Lincoln -----	23,088
Caddo -----	16,473	Logan -----	29,944
Canadian -----	19,722	Noble -----	14,501
Cleveland -----	12,726	Oklahoma -----	52,466
Comanche -----	26,205	Pawnee -----	20,930
Custer -----	14,820	Payne -----	20,060
Day -----	2,769	Pottawatomie -----	23,116
Dewey -----	5,820	Roger Mills -----	9,374
Garfield -----	27,403	Washita -----	14,162
Grant -----	18,362	Woods -----	40,932
Greer -----	29,913	Woodward -----	15,735
Kay -----	25,924		
Kingfisher -----	18,374	Total -----	521,002

*Assessed value of town property for the year 1904.*

Beaver -----	\$16,066	Kiowa -----	\$776,625
Blaine -----	247,773	Lincoln -----	522,017
Caddo -----	560,733	Logan -----	1,435,858
Canadian -----	589,729	Noble -----	352,772
Cleveland -----	378,203	Oklahoma -----	4,377,667
Comanche -----	837,908	Pawnee -----	349,772
Custer -----	285,524	Payne -----	574,732
Day -----	5,138	Pottawatomie -----	1,165,429
Dewey -----	68,301	Roger Mills -----	226,252
Garfield -----	743,454	Washita -----	193,489
Grant -----	187,149	Woods -----	564,232
Greer -----	665,360	Woodward -----	205,376
Kay -----	832,967		
Kingfisher -----	336,025	Total -----	16,498,551

PROPERTY AND TAXATION.

According to the returns made by the assessors this year there is \$90,609,073 of taxable property in the Territory. These figures show a healthy increase in valuations amounting to \$6,474,601 over 1903.

As assessments are seldom made for more than one-fifth of the actual cash value, and frequently for less than 20 per cent, it is evident that the true value of taxable property in Oklahoma is not less than \$450,000,000, and I am inclined to believe it exceeds \$500,000,000.

The value of farm lands and railroads has nearly trebled since 1900. Below is given a comparative table of property values for the years 1900 and 1904:

	1900.	1904.
Farm lands .....	\$9,875,698	\$30,668,770
Town property .....	8,892,938	16,498,551
Railroads .....	4,011,633	11,109,667
Monies and credits .....	1,273,731	4,059,729

The amount of revenue which will be collected by the levy of .00575 mills is \$521,002, which is a decrease of some \$4,837 from 1903.

Below is given a table showing the assessment in each county for



the years 1900 and 1904, which evidences an increase of over 80 per cent in values:

*Comparative table of the assessment of each county for the years 1900 and 1904.*

County.	1900.	1904.	County.	1900.	1904.
Beaver.....	\$1,573,563	\$1,671,046	Kiowa.....		\$3,084,872
Blaine.....	633,775	2,108,627	Lincoln.....	\$1,967,596	4,015,372
Caddo.....		2,864,879	Logan.....	4,432,980	5,033,760
Canadian.....	5,591,056	3,429,859	Noble.....	1,647,120	2,521,849
Cleveland.....	1,844,744	2,213,228	Oklahoma.....	4,386,337	9,124,530
Comanche.....		4,557,460	Pawnee.....	1,920,093	3,639,963
Custer.....	1,278,194	2,577,351	Payne.....	2,277,618	3,488,660
Day.....	435,012	481,547	Pottawatomie.....	1,933,734	4,020,185
Dewey.....	674,200	1,012,171	Roger Mills.....	738,150	1,630,259
Garfield.....	2,325,294	4,765,734	Washita.....	1,124,241	2,463,028
Grant.....	1,864,393	3,193,358	Woods.....	3,030,963	7,118,533
Greer.....	2,049,585	5,202,211	Woodward.....	2,386,459	2,736,540
Kay.....	2,647,044	4,508,544			
Kingfisher.....	2,576,510	3,195,507	Total.....	49,338,661	90,609,073

#### PENITENTIARY.

The Territory has no penitentiary. The prisoners are kept in the Lansing, Kans., penitentiary under a contract with that State. The Territory pays 40 cents per day for each prisoner.

The contract with the State of Kansas will expire on the 27th day of January, 1905. The Kansas authorities have expressed a disinclination to renew the contract. The situation so far as the Territory is concerned is a grave one.

There are at this time 379 Oklahoma prisoners confined in the Kansas penitentiary. What to do with them in the event that Kansas should refuse to renew the contract is a problem for serious consideration. The Territory has now and has had for several years a public-building fund sufficient to erect a penitentiary and other public buildings, but there is a Congressional prohibition against it each year and has been for some time past. When the Federal appropriation bill is passed by Congress, the portion of it relating to Oklahoma invariably contains a prohibition against the legislative assembly of Oklahoma making provision for any public building, notwithstanding the fact that there is in the treasury of the Territory ample funds to erect a penitentiary building and equip it for service. This Congressional prohibition should be removed.

The prisoners are employed in mining coal, making brick, making twine, working in furniture shops, quarrying rock, building roads in the vicinity of the institution, tailoring, and laundering their own clothes.

During the past year there have been received:

Males under 18 years of age..... 13

Males over 18 years of age..... 183

196

During the year there have been discharged..... 140

Showing an increase during the year..... 56

There are now confined in the institution from Oklahoma 379 prisoners, 7 of whom are women.

The table given below shows the number of convicts from each county.

*Prisoners in the penitentiary July 1, 1904.*

County.	Number.	County.	Number.
Beaver .....	2	Kiowa .....	4
Blaine .....	4	Lincoln .....	23
Caddo .....	13	Logan .....	69
Canadian .....	22	Noble .....	10
Cleveland .....	11	Oklahoma .....	24
Comanche .....	11	Pawnee .....	13
Custer .....	5	Payne .....	12
Day .....	2	Pottawatomie .....	47
Dewey .....	7	Roger Mills .....	5
Garfield .....	13	Washita .....	5
Grant .....	4	Woods .....	13
Greer .....	18	Woodward .....	7
Kay .....	25	Total .....	379
Kingfisher .....	10		

There has been paid during the past year for care and keeping of convicts at Lansing \$50,402.15, and for their transportation \$5,944.90; total, \$56,347.05.

## JUVENILE OFFENDERS.

I am informed by the various district judges that in compliance with chapter 18 of the Session Laws of 1903 they have suspended judgment in cases of convicted youths, releasing them upon their own recognizance in some twelve instances during the past year.

Heretofore those boys who were waywardly inclined when convicted of crime were sentenced to a term of imprisonment in the penitentiary.

To subject them to the demoralizing influence of and association with hardened criminals was but to assure their complete ruin and end of all hope of their moral betterment. By judicious use of the parole system many can be induced to lead more useful lives, and until such time as the Territory is permitted to provide a home for the incorrigible youth the power granted to the judges by the above-mentioned act will prove the most beneficial to the youths and society in general.

## APPREHENSION OF CRIMINALS.

After the organization of Oklahoma Territory certain localities were infested with bands of outlaws who preyed upon the honest settler, stealing his horses and mules, robbing trains, holding up individuals, committing various crimes often resulting in serious injury to the innocent, and frequently murdering those who resisted or attempted to capture them.

One of the most potent influences for good which enlisted honest men in its cause is the Anti-Horse Thief Association, which became a factor in locating these bands of outlaws and assisted the courts in bringing the guilty to justice some ten years ago. Much credit is due this organization for their persistent work in ridding our fair land of these desperate criminals.

The bad element, once so numerous when the country was new, has been either captured or driven outside our boundaries by the efforts of the members of this association, working together with public officers whose duty it is to enforce the laws.

James Kirkwood, president of the above-mentioned association, writes as follows concerning the work of the organization and its officers:

The Oklahoma division of the Anti-Horse Thief Association was organized in 1894, being granted a charter by the national association, which held its first national convention in 1862, having local organizations in northern Missouri and southern Iowa since 1859. The national association is composed of five grand divisions, of which Oklahoma and Indian Territory, excepting the Cherokee Nation, is one division. The national association has an aggregate of 1,050 lodges, with a membership of 30,000, of which Oklahoma has 460 lodges, with a membership of 14,000. The Oklahoma division has made a very rapid growth within the last two years, having added 215 lodges and an increase of 5,000 members.

The object of the association, as set forth in the preamble to charter granted to each subordinate lodge, is as follows:

"We, the citizens of the several States and Territories comprising the National Order of the Anti-Horse Thief Association, for the protection of ourselves against the depredations of thieves, robbers, counterfeiters, incendiaries, vagrants, and all other criminals, do hereby pledge ourselves to cooperate with the civil authorities in bringing to justice all such offenders, and aiding each other in the recovery of stolen property."

The association has been very successful along the lines for which it was organized. The report for last year gives a total of over \$12,000 in value of property recovered in horses and mules. It recovered 136 head, and captured or furnished information which led to the capture of 187 thieves, of which 117 were convicted. Outside of actual results, the association is a great power for good, holding in check the criminal classes and in keeping down all kinds of misdemeanors and lawlessness. It is a noticeable fact that wherever a lodge of this association is established stealing and lawlessness to a great extent disappear. The membership is composed of the better class of citizens; law-abiding and honorable men only will be accepted to membership. Honesty is the principal test for membership. Nonpartisan in all things political, working always to promote the best interests of the Territory, aiding the civil authorities and officers of the law, true and loyal to their country and fraternal to their fellow-men, and officered by able and conservative men, the Anti-Horse Thief Association will continue to be a potent factor for good in Oklahoma and Indian Territory.

The officers of the Oklahoma division are: President, James Kirkwood, Guthrie, Okla.; vice-president, Benjamin Young, Bristow, Ind. T.; secretary, Otto C. Listen, Edmond, Okla.; treasurer, J. M. Littleton, Meeker, Okla.

The executive committee is composed of the following-named gentlemen: W. W. Pierce, Wetumka, Ind. T.; G. T. Siffert, Ponca City, Okla., and G. G. Wyss, Pawnee, Okla.

#### INSANE.

Up to the present time the insane patients of the Territory, who have been committed by the various county boards of insanity, have been confined in an institution located at Norman, Okla. This institution is a private concern, with which the Territory has a contract for the care and keeping of its insane.

The Territory made a contract with the Oklahoma Sanitarium Company in May, 1901. The contract extends to June 15, 1905. For keeping the insane patients of the Territory the contract provides that the company shall receive \$200 per annum for each patient.

In 1903 the legislative assembly of Oklahoma enacted a law locating the sanitarium on the Fort Supply Military Reservation, in Woodward County. The Federal Government had previously tendered the use of said reservation to the Territory of Oklahoma to be used for the purpose of locating an insane asylum thereon. The act of the Oklahoma legislature in 1903 provided that the asylum should be moved to Fort Supply as soon as a steam or electric railway



should be built to that place. Fort Supply is located off of a railway. No railway of any kind has been built up to date.

The act of 1903 also provided that until a railway, either steam or electric, should be built to Fort Supply, the present contract (the one entered into in May, 1901) shall remain in force.

Persons connected with the Capitol National Bank of Guthrie, Okla., owned some of the sanitarium stock. The Capitol National Bank failed on the 4th of April, 1904. A receiver was appointed by the Comptroller of the Currency. The persons who were connected with the Capitol National Bank and owned stock in the sanitarium turned their stock over to the receiver. Other sanitarium stock was secured by the receiver amounting to enough to give the bank a controlling interest. The company was reorganized by the receiver and is now under his control. When the affairs of the bank are settled, what disposition will be made of the sanitarium is not known at this time.

## OKLAHOMA SANITARIUM.

[D. W. Griffin, M. D., resident physician.]

At the close of the year ending June 30, 1903, there were domiciled in the institution—

Males .....	133
Females .....	267

Total .....	400
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Received during the year:

Males admitted on commitments .....	178
Females admitted on commitments .....	110
Males returned from parole .....	6
Females returned from parole .....	6

Total .....	300
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Total treated during the year .....	700
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Died:

Males .....	26
Females .....	13

Total .....	39
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Discharged:

Males .....	131
Females .....	62

Total .....	193
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Out on parole:

Female .....	1
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Escapes:

Males .....	12
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Total removed during the year:

Males .....	169
Females .....	76

Total .....	245
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On hand June 30, 1904:

Males .....	271
Females .....	168

Total .....	439
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Of the 439 patients on hand, the causes assigned are as follows:

Overstudy .....	4	Epilepsy .....	56
Paralysis .....	1	General debility .....	3
Paresis .....	4	Heredity .....	138
Privation .....	9	Idiocy and imbecility .....	77
Senility .....	23	Intemperance .....	14
Syphilis .....	6	Masturbation .....	6
Unknown .....	24	Mental excitement .....	1
Chronic illness .....	24	Mental worry .....	15
Tuberculosis .....	2	Chronic poisoning .....	2
Acute illness .....	7	Overwork .....	6
Domestic trouble .....	7		
Childbirth .....	10	Total .....	439

*Ages and number of males admitted during the year.*

Under 16 .....	2	Between 50 and 60 .....	18
Between 16 and 30 .....	29	Between 60 and 70 .....	13
Between 30 and 40 .....	68	Over 70 .....	5
Between 40 and 50 .....	43		

*Ages and number of females admitted during the year.*

Under 16 .....	1	Between 50 and 60 .....	8
Between 16 and 30 .....	20	Between 60 and 70 .....	4
Between 30 and 40 .....	41	Over 70 .....	1
Between 40 and 50 .....	35		

*Number of patients from counties.*

Beaver .....	4	Kingfisher .....	21
Blaine .....	6	Kiowa .....	5
Caddo .....	8	Lincoln .....	26
Canadian .....	30	Logan .....	31
Cleveland .....	24	Noble .....	9
Comanche .....	13	Oklahoma .....	49
Custer .....	12	Pawnee .....	18
Day .....	4	Payne .....	21
Dewey .....	8	Pottawatomie .....	31
Garfield .....	14	Roger Mills .....	8
Grant .....	7	Washita .....	14
Greer .....	11	Woods .....	25
Kay .....	24	Woodward .....	16

*Number and causes of deaths during year.*

Pulmonary tuberculosis .....	8	Exhaustion .....	4
Paralysis .....	1	Epilepsy .....	6
Heart disease .....	5	Injury .....	1
Senility .....	11	Septic infection .....	1
Suicide .....	2		
Apoplexy .....	1	Total .....	40

The sanitarium is located 1 mile east of Norman, Okla., on 50 acres of land, part of which is used as a garden for the benefit of the inmates, part for a walk, the rest being planted in shade trees, which are several years old and give a complete shade where planted. This grove is partially converted into a park, the parade ground for the benefit of the patients, where they are allowed to go in the morning and afternoon of every day when the weather is suitable. Benches and walks are provided, and inmates allowed their discretion in enjoying these while in the parade ground.

During the year many improvements have been made. Owing to the increased number of patients admitted, we have constructed three new buildings, one a two-story frame building, 100 by 32 feet, which accommodates 74 male patients, equipped throughout with all the latest and most modern hospital appliances. Also a 100 by 32 foot addition to female ward No. 7. This addition, equipped

in like manner, accommodates 52 patients. We have recently finished and equipped with all the latest hospital appliances, including a surgical operating room, a male infirmary, which will accommodate 30 patients, giving us all the room necessary to care for and treat sick patients away from the noise of the wards. We have a female infirmary with like equipment, which accommodates 12 patients. These infirmaries are both in charge of graduated and trained nurses.

During the year there has been erected and remodeled a new steam laundry of ample proportions to take care of twice the number of patients we have at this time, with a boiler house and engine for the same, and at an expense of \$1,400 we have added a new well and pumping apparatus, which is all of first-class machinery, furnishing an ample supply of water.

During the year the sewerage system of the sanitarium has been remodeled and improved, emptying into the new germ-destroying cesspool, which has proven to be a success in every particular.

The old buildings have been refurnished with new beds, bedding, and bed linen throughout.

Under the terms of the contract now in force the Territory pays \$200 per annum for each patient for care and keeping.

During the past year there has been paid as follows:

Care and treatment.....	\$78, 642. 51
Transportation .....	5, 417. 64

#### DEAF-MUTES.

The deaf and dumb of the Territory have been cared for and educated in an institute for that purpose located at Guthrie. This is a private institution and is owned by H. C. Beamer, with whom the Territory has a contract, the terms of which require the Territory to pay \$275 per annum for each scholar.

The amount expended during the past year in caring for and educating these unfortunates was \$18,935.56.

Mr. Beamer submits the following report of the institute:

There has been no change in our corps of teachers. The progress the pupils have made the past year is very encouraging and satisfactory to both the officers and parents. The health of the pupils has been excellent. Two cases of slow malarial fever; one of them showed symptoms of the disease when he first entered school; neither case serious. Two cases of appendicitis—one during the winter, not seriously ill at any time; the other, George Rogers, of Pottawatomie County, was seriously ill from the beginning; was sick a little more than a week; had all the care possible and the best of attention from the physician, but nothing could save him. His death occurred June 30, the first death in the school, which we regret very much. With the number of children in attendance, it is remarkable that there is so little sickness among them. Their regular habits and the sanitary condition of the premises have a great deal to do with their general health. The morals of the pupils are good. The work done in the Christian Endeavor Society (which meets every Sabbath evening) has been a very great benefit as well as pleasure to the pupils. The line of work has been laid down and carried out by the help of the teacher in charge, Miss Edith Brummitt.

The literary society, presided over by the principal, Mrs. Pearl H. Dunham, has been instructive and entertaining, and has been a great help in overcoming self-consciousness and is broadening to their minds.

The physical-culture classes, in charge of Miss Frieda Bauman and Miss Frances Hockensmith, have been very beneficial in developing their bodies, as well as teaching them the correct way of walking, standing, etc. The several holidays of the past year have been observed with appropriate services and entertainments, which have been instructive and entertaining to the pupils. There are pupils in the school who have been in no other and who, although unable upon entering to understand or express a thought in the simplest English, have at the end of their sixth year completed a year's work which will compare favorably with sixth-grade work of hearing schools.

The number of pupils in attendance this year was 74. Of this number, 1 was taken off the records, having reached the age limit (21 years); 3 moved out of



the Territory: 1 did not return on account of sickness; 1 was taken out to have eyes treated, and 1 died, leaving 67, from the following counties:

Beaver -----	1	Lincoln -----	2
Blaine -----	2	Logan -----	9
Caddo -----	4	Noble -----	2
Canadian -----	3	Oklahoma -----	1
Cleveland -----	1	Pawnee -----	1
Comanche -----	2	Payne -----	3
Custer -----	1	Pottawatomie -----	7
Day -----	1	Roger Mills -----	1
Dewey -----	1	Washita -----	2
Garfield -----	3	Woods -----	5
Greer -----	3	Woodward -----	5
Kingfisher -----	5		
Kiowa -----	2	Total -----	67

From statistics received there are several more heard from which will probably make the school number not far from eighty next year.

#### PUBLIC BUILDINGS.

Oklahoma has no public buildings, and is prohibited by Congressional act from locating any. Several are very much needed, notably asylums for the insane, deaf, dumb, and blind, a penitentiary, and a home for the incorrigible youths.

When statehood shall have been attained and these public institutions located the present public building fund will afford a nucleus for the fund required for their erection. Annual tax assessments have increased this fund until at the present time it amounts to \$305,956.69.

Some years ago levies were made for the purpose of caring for and educating the blind in the Territory. This fund now amounts to \$7,212.98.

Appropriations have been made for Federal buildings at Guthrie and Oklahoma City, but none are as yet constructed.

Fine educational buildings have been erected during the past year at Oklahoma City, Edmond, Norman, Guthrie, and Weatherford.

#### OKLAHOMA HISTORICAL SOCIETY.

[William Campbell, custodian.]

The Oklahoma Historical Society was conceived by the editors of the Territory at their annual convention in Kingfisher in 1893, on the central idea that there should be a place where the various publications of the Territory might be gathered and preserved for future reference and as an aid to the future historian. Of course all other things which might enlighten the future on the people and incidents and conditions of the past were taken into account. At the end of two years, in 1895, the Oklahoma Historical Society was chartered and became a Territorial institution by statute, with Norman as the seat. It was subsequently moved by permission of law to its present location in the Carnegie library building at Oklahoma City.

The society consists of general membership, a board of 11 directors, president, vice-president, second vice-president, treasurer, secretary, and custodian. There are now 1,400 bound volumes of newspapers

of the Territories on the shelves of the society, and publications are being received which will increase the volumes perhaps 300 the coming year. Practically every publication of Oklahoma and the Indian Territory is being sent the society for preservation. Besides, there are many rare books, pamphlets, photographs, and curios, these likewise being daily augmented, making the collection one of great interest and invaluable as a depository of Territorial lore. Some of these collections may seem insignificant just now, but it should be borne in mind that the commonplace things of the past are the rarest relics of the present, and so the things that seem commonplace to-day may be the rarest relics of the future. The work of making these collections and caring for them increases as the collection increases, and to do the work properly to the end in view is a painstaking and intelligent one, upon which the success and the utility of the collection depends. The society has become of that importance in its extent, as well as in its objects, that it well deserves the considerate attention of the legislature.

While the society is by no means confining its efforts to the collection and preservation of Territorial publications, it must be conceded that these files alone will prove of inestimable value to the future and a source of great convenience to the present and passing time. The newspapers are recognized as a potent factor in the upbuilding of the country, in the maintenance of order and good government. Whatever may be its peculiarities in spots, as a whole it is the surest chronicler of those events of all things which pass for history. Besides, the men who have charge of these current sources of current things deserve more than passing consideration at the hands of the Territorial sponsors. To aid them in preserving their files is a modest recognition which should be given with a freeness resembling pleasure and without quibble.

*Newspapers published in Oklahoma.*

County.	Daily.	Weekly.	Semi-monthly.	Monthly.	Quarterly.
Beaver.....		8			
Blaine.....		10			
Caddo.....	1	14			
Canadian.....	3	8			
Cleveland.....		4	3	1	1
Comanche.....	2	13			
Custer.....		11			
Day.....		3			
Dewey.....		6			
Garfield.....	3	13		5	
Grant.....	1	12			
Greer.....		12			
Kay.....	3	14		2	
Kiowa.....	2	13		1	
Lincoln.....	1	18			
Logan.....	2	17		3	
Noble.....	2	6		2	1
Oklahoma.....	3	13	1	5	
Pawnee.....		9			
Payne.....	1	8		2	
Pottawatomie.....	3	13		1	
Roger Mills.....		7			
Washita.....		6			
Woods.....	1	28		1	1
Woodward.....		10	1		
Total.....	28	285	5	23	3

## INVESTMENTS—PUBLIC AND PRIVATE CREDIT.

The phenomenal prosperity of all of our industries, our manufactures, and, above all, our agriculturists, during a number of years past, has firmly established the credit of Oklahomans in eastern financial centers.

Oklahoma has been a most profitable field for investment. Our securities always bring the highest price on the market and are much sought after. Our abundant resources in the way of raw material have invited capital for manufacturing. The farm loan has always proven safe, and the interest returns to the lender quite satisfactory.

W. R. Swartout, superintendent of the Bradstreet mercantile reporting business in Oklahoma, furnishes the following relative to the mercantile and financial conditions:

Corporations, firms, and individuals in business in the Oklahoma district show a gain of nearly 200 per cent since the establishment of our office January 1, 1900. At that time there were between 3,700 and 3,800 firms upon the books, and at the present time we are reporting a total number in excess of 10,000. The wholesaling interests of the Territory show an increase steadily each passing half year, exhibiting a gain both in volume of business and capital invested. The Territory now has within its borders well-equipped and well-stocked houses operating extensively as exclusive jobbers in builders' material, paper, and stationery, hardware, drugs, dry goods, optical goods, dental supplies, millinery, saddlery, glass and paints, groceries, etc.

In manufacturing enterprises the flour-making industry continues well in the lead, and a considerable number of these milling plants show investments exceeding \$100,000 and one with an invested capital of about \$300,000. Investments in cotton-gin plants, compresses, and oil mills this year show an extraordinary increase over that of any preceding year, this being but an indication of the fact that cotton is one of the leading interests of this region and may not long continue to occupy a second place. The fact of a largely increased acreage of broom corn and the knowledge that a large portion of Oklahoma is especially adapted to this product will in part account for the growth of the broom-manufacturing interests and the preparations in progress for greater investments along this line. The amount of money which will come into Oklahoma in the fall of 1904 in payment for broom corn produced within the Territory will be 50 per cent above the amount realized in any preceding year, and will bring to many of our people a realization that the production of broom corn in Oklahoma will attract widespread attention hereafter.

One large concern in the Territory, equipped with modern and up-to-date machinery, is now successfully engaged in the manufacturing of sash, doors, etc., and another in the manufacture of paper boxes. Two concerns are engaged in the manufacture of show cases and office furniture. One meat-packing plant is in successful operation, handling a large business, and the manufacture of structural and other ironwork and of brick and the successful establishment and operation of several cement plants and salt plants show that the manufacturing interests of Oklahoma may be regarded as of growing importance.

A notable feature in mercantile affairs of the Territory is the increase of investments in stocks of goods, many of these stocks carried in the larger towns representing an investment of 200 per cent to 300 per cent greater than was the case five years ago. The mercantile establishments of the larger towns are also building houses in a manner befitting their increasing importance. Business houses of modern type, several stories in height, equipped with elevator service and all the belongings and conveniences that go with such establishments in the best portions of the country, are now features of the large Oklahoma stores in our leading towns.

Notwithstanding the fact that the summer of 1904 has been one marked with trade depression throughout the Southwest, Oklahoma has had fewer mercantile failures during 1904 up to August 15 than in any other like period for the past five years. Considerable attention has been attracted to the failure of three banking institutions in the Territory during the past few months, which failures have been the occasion of much unfavorable comment. I have good



reasons for making the declaration that the failure of these banks was not due either to crop shortage or lack of prosperity in the communities where the various banks were located, and such failures do not and did not properly reflect the trade conditions and financial conditions of the communities where those banks did business.

The standing and credit of our merchants and tradesmen show a steady improvement, and are of a higher average than those of any region of like age in the United States. Our leading dealers find no difficulty in obtaining credit proportioned to their financial strength, in all trade centers of the Middle West, the manufacturing towns of New England, and metropolitan cities of the Atlantic seaboard. Some few of our dealers in special lines have during the past two years become importers on their own account, and their foreign purchases for 1904 will aggregate a considerable sum.

Regarding the financial condition of Oklahoma Territory, M. L. Turner, of Oklahoma city, president of the Western National Bank of that city, who has perhaps handled more bonds and warrants of the Territory of Oklahoma, the counties, cities, and school districts of the Territory than any other dealer in securities of this nature, has the following to say:

Owing to the strict laws of Oklahoma Territory under which securities are issued the Territory can not contract a debt in excess of 1 per cent of its assessed valuation, and the Territory has never had a debt anywhere near the limit. In the cases of counties, cities, and school districts the limit of debt is 4 per cent of the assessed valuation. Except in case of cities where bonds are issued for waterworks, under a special act of Congress, the cities are permitted to contract debts sufficient to supply waterworks. It is owing to these strict laws governing debt that the Territory's credit is perhaps higher than that of a great many States.

There has never been a single defalcation of any Territorial indebtedness, all bonds and warrants having been paid promptly. In fact, the Territory has just recently retired the only bonds ever issued (\$48,000), which were issued in 1893 for the Territorial colleges.

The assessed valuation of the Territory of Oklahoma is about \$88,000,000. The actual value of all property at this time is (estimated) \$500,000,000. Hence with a low-debt limit on the Territory, counties, cities, and school districts, our debt is very light. In fact, in the Territory proper the debt is about \$1 per capita, or about \$600,000.

The Territorial warrants draw 6 per cent interest and run about three years, and for the past four years we have been taking all these warrants at par or face when issued.

Bonds of counties and cities drawing 5 per cent and running twenty years have been selling at a premium, and with the prospects of statehood in the next two years, and owing to the promptness with which all obligations have been paid, our securities have been in great demand.

Eastern loan companies have been doing a large business in placing farm and city loans at about 6 per cent, and one agent, who has perhaps made a greater number of loans than any other, tells me he has not had a single foreclosure. Real estate loans are made at from 6 to 7 per cent.

The Deming Investment Company, of Oswego, Kans., having branch offices under salaried employees at Oklahoma city, Perry, Enid, and Lawton, Okla., and whose nearly twelve years of constant, active, and extended experience in handling Oklahoma farm loans probably entitles it to speak with greater authority on this subject than any other corporation, consider the Territory an unsurpassed field for that class of investments. The succeeding statement by the Deming Company gives a fair presentation of conditions, past and present, from the investor's standpoint:

Our early confidence in the producing power of the Territory, resulting from a careful examination of its climate, soil, and people, has never met with disappointment. Indeed, our expectations, like those of every one else except the wildest boomers, fell short of the actuality. So great and so rapid has been

Oklahoma's agricultural development that investors have turned naturally to the field thus offered, without having been enticed through the booming, overstatement, and trickery which have too often been used to divert capital toward a new country. The land and the man have shown what they could produce, and with such tangible evidence before their eyes lenders of money have for more than eleven years exchanged it for Oklahoma mortgages with perfect trust, and their faith has been fully rewarded.

The high standing of the Oklahoma farm mortgage among securities of recognized worth is now permanently fixed. When we began nearly twelve years ago to present its merits to the investing public it was naturally regarded with caution, and heavy interest returns were demanded by those who had sufficient courage or confidence in this new country to put their money into its securities. The showing which the young Territory almost immediately began to make was so excellent that the original investors increased their holdings and the doubters soon gave way to the pressure of facts, until within three or four years a large volume of money began to be, and has ever since been, available to Oklahoma through the channel of the farm mortgage.

The strongest evidence of increasing confidence in any class of security is a rapid and continuous advance in its market price. The fact that but a few years ago the ruling rate of interest on farm mortgages was 3 or 4 per cent higher than to-day, indicates better than anything else what the investing world thinks of Oklahoma as a successful farming country.

Our own experience serves to conclusively show the solid basis upon which this confidence rests. We have loaned altogether nearly \$3,000,000 upon over 4,000 Oklahoma farms. We own but one of these properties, and our eastern clients have never had title to even one. The total amount of delinquencies on loans in force is insignificant, and never has it reached any considerable figure. The Oklahoma farmer has never been unwilling and rarely been unable to meet his obligations at maturity. During this time, and, indeed, for ten years prior thereto, we have also been placing the finest possible line of Kansas business; and several years since we began to realize this remarkable fact, that the Territory, first settled but fifteen years ago, meets with as ready a market for its farm loans as does Kansas, now 50 years old, and has to pay but little if any higher rate of interest.

Oklahoma's rich soil and favorable climatic conditions, enabling it to so abundantly produce greatly diversified crops, have undoubtedly together been the key to its marvelous progress and prosperity. Its crop season is long; its stock-feeding period short. The crops of the North, as well as of the South, are successfully and profitably raised here. Besides these invaluable natural advantages, the human element is supplied by a class of farmers whose intelligence is unsurpassed, and in most instances unequalled, by those of any State of the Union. They are of the bold, progressive type, extensive readers, and with minds open to every suggestion of practical benefit to themselves. Transportation, too, one of the most important considerations, has contributed very largely to the Territory's prosperity. Located as it is, but a little way south of the nation's center, it is traversed by many of the greatest western trunk lines, which connect it directly with Memphis, on the Mississippi, Denver, Kansas City, St. Louis, Galveston, and all Gulf points within but a few hundred miles' haul.

So marked are its advantages in this way that its wheat and corn have brought for shipping purposes several cents per bushel above the price of the same grades in the great farming State of Iowa. This is directly to the farmer's advantage, and that which helps him benefits his creditors and tends to establish confidence in his debt-paying ability.

The early loans were used largely to aid in opening, improving, and stocking the farms. Those of later years were principally to assist in meeting purchase-money payments in connection with the increased activity in sales of land. The past year has seen a continued reduction of the mortgage debt. With but few exceptions the large life insurance companies which invest in farm mortgages are now making active efforts for Oklahoma business, and this applies also to the hundreds of trust companies and savings banks, as well as to the thousands of private investors who have discovered the superiority of this form of investment over all others.

The eastern man with money to lend, and the Oklahoma farmer with well-grounded confidence in himself and his farm, are staunch friends. As coworkers they have exerted, and are to-day exerting, the greatest single influence in this Territory's upbuilding.



Mr. L. W. Clapp, of Wichita, who has had considerable experience in the matter of investments in mortgage loans on farm lands in Oklahoma, states as follows:

In the early part of the year 1894 I began placing funds in farm-mortgage loans on lands in Oklahoma Territory, and have without interruption continued to increase the amount of such investments from year to year until my clients and self now have a larger sum thus invested than at any prior date. In the earlier years of my work the lands were largely in their original native condition, a considerable portion in the eastern half having not been cleared of timber, while the prairies were without fences, and but comparatively small portions broken out or put into cultivation.

Improvements were meager. The original population were largely entrymen under the homestead acts, who had taken claims and thereto moved their families and worldly effects. Most of these original settlers were good, honest American citizens, but poor. The panics and depressions of 1891 to 1894, and the frequent dry seasons and repeated crop shortages in the Western and Central States during the years 1889 to 1893, accompanied by extremely low prices, had first exhausted the resources of many farmers in the older States, and then the resulting discontent drove them on to the new country—Oklahoma.

Hence, at an early date, as soon as, under the provisions of the land laws, final proofs could be made, the new settlers saw opportunities to join forces with nonresident capital, and as the Oklahoman was long on acres, strength, and boys, but short on capital, the investors of older States were sought to lend their accumulated savings to help clear, fence, and break the lands, build modest houses, stables, and bins, and stock the fertile lands awaiting the planting and nursing to bring forth harvests of value with which to pay the interest and eventually the principal.

Confidence was not wanting in the character of the lands nor the ability of the people from the beginning. Under the impetus of the inflow of money thus furnished, supplemented with the millions of dollars required for the town building and railroad construction, augmented a third time by good crops and high prices, an area equal to half of a Central State has developed, without a precedent in even the former unparalleled growth of the Western States of America. Ten years has made of Oklahoma towns and farms, physically, what fifty years was required to do for Iowa, Kansas, or Nebraska.

The people owe much money, of course. The conserved resources and accumulated savings, naturally, are not advanced to the condition of older States, but the degree of development and general appearance is quite equal to that of any of its neighbors west of the Missouri River. Favorably located, between the latitude of the Southern States, with their cotton, corn, and fruits, and the Middle States, with their grains and live stock, Oklahoma blends into both and in this respect has some happy possibilities not possessed by Texas on one side or Kansas and Nebraska on the other.

With the Indian Territory, which is logically a part of Oklahoma, and which the destiny of events must merge with it, the area of both Territories, flanked on the east with the mountains of Arkansas and on the west by the foothills of the Rockies, constitutes a home for one of the most resourceful and naturally wealthy Commonwealths of the Union.

Its people, made of a concrete of the most progressive and active elements of North and South, essentially American born, possess the ambition, ingenuity, and native thrift and love of home and school that guarantees a community of character, wealth, and responsibility.

The only proximate danger to Oklahoma or its people is an overconfidence in its debt-paying ability under adverse financial and agricultural conditions. Since the first few years of the pioneer settlers it has never been subjected to a test of endurance. This must come sooner or later. If deferred until natural growth can create a reserve to tide over concurrent adversities when they arrive, no evil results may appear, or, at least, in mild form. An early recurrence of close financial conditions, short crop seasons, low prices for farm produce, and certain cessation of inflow of railroad, town building, and immigration funds, would bring thoughtful times. The preventive is conservative borrowing and business methods. Lenders will be equally responsible with borrowers should any disaster result. To this date there have been no more considerate borrowers or prompt and scrupulous payers than the Oklahoma people.



## MINING.

The subject of minerals in the Wichitas has for many years interested people far and near, some of whom have imagined that mineral wealth was concealed there equal to, if not surpassing, the deposits in the Rockies.

The able report on the subject by H. Foster Bain, who made careful investigation some months ago, has been confirmed by Prof. E. De Barr, of the university, at Norman, who recently visited the district, obtaining nearly 200 samples from various mines, which he carefully selected and assayed. He states that "all samples were assayed by fluxes and by cyanide processes, and heavy sulphides were assayed by the chlorination process, and all save one (No. 136) showed no trace of gold whatever." The exception above referred to (No. 136) was a sample "obtained from washing placer material obtained from creeks and the Deep Red River, in which material there is a very small quantity of exceedingly fine gold in a limited area. The lack of water and the black iron in which it is found, together with the limited amount of gold therein, renders it unprofitable for working."

One sample showed 98 ounces silver and 3.6 per cent lead to the ton. Some others contained from 3 per cent to  $8\frac{1}{3}$  per cent copper.

He further states that—

In collecting and sampling the above ores the greatest care was taken to secure a good sample free from contamination and with a view to revealing the true condition of values for the supposed mineral-bearing material. Whenever possible the samples were taken from the shafts, and in most instances they were taken in my presence.

## UNDEVELOPED RESOURCES.

Among the natural resources which are but partially developed may be mentioned the extensive salt deposits. In some localities, where springs of water flow through beds of salt and become so thoroughly impregnated as to leave on evaporation a considerable deposit, the manufacture is carried on in a primitive manner, utilizing the sun's rays to produce evaporation.

Tracts of country called salt plains are found in Woods, Woodward, Blaine, Roger Mills, and Greer counties.

Professor Gould, of the university, writes as follows concerning these plains:

Most of these salt plains are fed by salt springs which are near the surface of the salt plains, while others can not be located.

The Woods County plain or the Big Salt Fork of the Arkansas River is in the eastern part of the county and within some 45 miles of the gypsum hills. This plain includes an area of 60 square miles, extending some 12 miles north and south and 6 miles east and west. This plain is as level as a floor and on ordinary occasions as white as a snow field. It is absolutely barren of vegetation. How this plain is fed is yet to be discovered. Around the edges some few salt springs are found, but of no consequence. Upon digging a hole a few feet deep, and anywhere in the plain, in ten minutes the hole will be filled with salt water, 50 per cent salt. The plain is composed of loose sand, and the salt water seeping up near the surface evaporates, leaving the white crystalline salt incrustations.

In Woodward County there are two salt plains in the valley of the Cimarron River. These salt plains are not as large as the big plain, but cover considerable area. On the south side of the plains a number of salt springs are found.

Some of these flow a stream as large as a man's arm. Enough salt has crystallized around some of these springs to be scraped up and hauled away.

The Blaine County salt plain is a canyon at the foot of the gypsum hills of Blaine County. The plain is fed by salt springs which come from the gypsum hills.

The plain covers an area of 100 yards by 3 miles. The Salt Creek plain is the nearest to fuel which comes from the Indian Territory, and as far as commercial advantages are concerned it seems to be the salt plain of Oklahoma. For several years primitive salt plains have been operated. The method of evaporating salt is very simple. A hole is dug in the loose sand of the plains, and as this fills the salt water is pumped into vats and the liquid evaporated. It is said that 3 bucketfuls of brine make 1 of salt. The salt is hauled in wagons to supply local trade, and the demand is said to exceed the supply.

This plain is estimated to flow salt water enough to supply a State with salt, and nearly all of it now goes to waste.

There is enough salt in this one plain to supply Oklahoma for all time, and if fuel can be secured cheap enough it can be made a very profitable industry.

#### GYPSUM.

The gypsum deposits in some counties are so vast that it is difficult to comprehend their extent. The great abundance of this material, both in the form of rock and dirt, is sufficient to supply a large number of cement mills for a hundred years.

#### GRANITE.

The Oklahoma granite fields are located principally in Greer County, and consist for the most part of high and massive mountains; and there is such an abundance of this rock above-ground that it alone would supply the granite-using world for many years to come. The quality is the very best. The greater portion is solid red granite, pronounced by experts to be the equal of the celebrated Peterhead Red Scotch granite and equally adapted for monumental and building purposes. The Oklahoma granite may be quarried in great blocks, which adds much to its monetary value as well as increases its desirability for building purposes.

The finding of red granite in Oklahoma is one of the important discoveries of the present day. It is a discovery the value of which would be difficult to estimate. Not only is red granite very scarce, but also the cost is correspondingly high as a consequence. The larger portion of the red granite used in the United States comes from Scotland. On this imported article the United States has for years paid a high duty, in addition to the cost in freight rates in transporting the same. With the red granite from the Oklahoma fields on the market a decided change in conditions will be made possible, and red granite will again become very popular for monumental work as well as for building purposes.

The Oklahoma granite is easy to reach and may be removed from the quarries with but little expense.

#### COAL.

Coal has been discovered in several places in Oklahoma, but not until recently has much interest been paid to the development of mines. The surface or superficial veins vary in thickness from 4 to 8 inches, and while of little value for commercial purposes, are chiefly important in indicating the presence of the deposit at a



greater depth. The second vein usually runs from 2 to 5 feet in thickness, and is several hundred feet below the surface.

Coal has been found at various times in the counties of Oklahoma, Lincoln, Noble, Pottawatomie, Pawnee, and Roger Mills.

#### OIL AND GAS.

Much interest has developed during the past year in many localities because of the finding of oil and gas in considerable quantities. Local companies have been formed for the purpose of drilling in nearly every town of importance, and prospecting has thus far developed the presence of oil at a depth of from 1,500 to 2,000 feet in greater or less quantities. The Cleveland well, in Pawnee County, on the east side of the Territory, has proved to be a large producer, and this field will doubtless show great results in the near future.

Gas having considerable pressure has been encountered at Blackwell, Newkirk, Lawton, and other points.

Asphalt has also been found in Caddo County.

#### PETROLEUM OIL AND NATURAL GAS.

[Lincoln McKinlay.]

These valuable natural products are found in several parts of the Territory, and a number of enterprising communities and companies have been prospecting for several years with varying degrees of success, but now Oklahoma seems to be on the threshold of a great development of gas and oil product.

A line extended from the most westerly points in Kansas that are now producing gas and oil in commercial quantities will cross Oklahoma from about where the Arkansas River crosses into the Territory southwesterly to the region of the Wichita Mountains, and a line extended from the most easterly points in Kansas where the same product is found will pass southerly through Indian Territory. A large part of Oklahoma lies within this triangle which in Kansas and Indian Territory and in the Osage Indian reservation in northeastern Oklahoma has developed an immensely valuable product of both natural gas and crude oil.

For a number of years crude oil has been known to exist in the region of the Wichita Mountains, and considerable development has been carried on in this region in the vicinity of Granite, Hobart, and Lawton. The oil is found at depths varying from less than 100 feet to about 500 feet, producing an asphaltum oil, which has been marketed in moderate quantities from some of the wells. A little natural gas was also developed in some of the wells.

Natural gas has been struck in several wells at Blackwell and also at Newkirk, in Kay County, at depths ranging from 600 to 850 feet and in quantities of commercial value, but difficulty has been experienced so far in keeping the water out of the gas sands. One well 9 miles southeast of Newkirk, in Kay County, has been producing small quantities of gas and a high-grade crude oil for two years. Drilling is now in progress or under contract near Oklahoma City, Blackwell, Ponca City, McLoud, Chandler, Shawnee, Cushing, Newkirk, Guthrie, and several other points in this Territory, and recently



a valuable oil well was struck near Cleveland, in Pawnee County, at a depth of 1,625 feet. This was followed soon after by the bringing in of two wells near Jennings, in the same county, establishing a field in that region.

The greatest oil and gas development in this Territory so far has been along the eastern side of the Osage Indian Reservation, where oil wells of great value and large product have been developed for a number of years and where new wells are being constantly added to the district. The oil is marketed from Bartlesville and the pipe lines recently completed there, and is found at a depth varying from 110 to 1,600 feet. Many valuable gas wells developed in this region are closed up or abandoned because of the absence of manufacturing towns and interests to utilize the product. Recently this field has been extended westward by the drilling of two or three gas wells at Pawhuska, in the Osage Nation, one of the wells having one of the largest flows of natural gas in the West and found at a depth of 1,996 feet. These wells also showed an oil sand. Valuable oil wells have also been developed in the northern part of the Osage Nation.

The prospect drilling that has been done in Oklahoma heretofore has been mostly to depths of less than a thousand feet, with a few wells reaching a depth of 1,600 or 1,700 feet, but the recent valuable wells developed at Pawhuska and in Pawnee County, which are the farthest west of commercial wells in eastern Oklahoma, show that there is a gradual dip downward to the westward in the gas and oil formation of the Kansas and Indian Territory fields, and that the regions that have developed gas and oil in smaller quantities have not yet reached their true oil and gas level. The great worth of natural gas as a fuel to the towns of Oklahoma has induced many communities and cities to attempt to develop it, and as the field of successful development moves west, as it is constantly doing, more and more drilling will be done until no doubt many parts of Oklahoma will be producing oil and gas, and manufacturing interests will be developed accordingly, as in the other natural-gas fields of the West.

#### LABOR SUPPLY.

During certain seasons there is a greater demand for labor than can be supplied. This is particularly true during the wheat harvest and the cotton chopping and picking season.

No man need be idle at any time, as there is work for all. Manufacturing are springing up in many of our cities, which give employment to large numbers of men.

Several cities are grading and paving streets, putting in sewer and water systems, and erecting public buildings that require labor more or less skilled.

The large amount of railroad building that has been accomplished during the past year furnished employment to a vast number of men. Since the completion of the above-mentioned lines railroad shops at different localities have given many machinists and other laborers employment.

Our mercantile and wholesale houses are increasing in number. All industries are in their infancy, and as necessity develops them the demand for labor increases.

## OKLAHOMA BAR ASSOCIATION.

[Charles H. Woods, secretary.]

The Oklahoma Bar Association grew out of, or extended from, an organization of attorneys in Guthrie known as the Logan County Bar Association. The leading figures in the organization of this county association were Harper S. Cunningham, since member of the Territorial legislature and Territorial attorney-general; Charles Berger, who was the probate judge of Logan County; S. L. Overstreet, at one time United States attorney of the Territory of Oklahoma; Col. Tom Soward, also prominent as a citizen and lawyer. This county organization was perfected directly after the granting to the Territory of its organic act.

The present association, organized to cover and embracing the entire Territory as it then existed, was organized during the term of the supreme court of the Territory, in the year 1890. Its first president was Harper S. Cunningham. Its first secretary was Charles Freeman, who was the first county attorney of Logan County. Mr. Cunningham was repeatedly reelected and held the office of president of the association from 1890 to 1897, inclusive. Mr. Freeman remained secretary from 1890 to 1892. He was followed as secretary by Mr. A. H. Houston, who remained in office until 1894. Mr. Houston has been county attorney of Logan County and member of the council of the legislative assembly from his home district. Mr. Houston was followed as secretary by Mr. Charles Filson, who was at one time clerk of the supreme court and is now chairman of the Territorial Republican executive committee. He was in turn followed by Mr. Edgar West Jones, who was also clerk of the supreme court and has filled the office of county attorney of Logan County and member of the lower house of the legislative assembly. Mr. Jones's incumbency extended from January, 1897, to January, 1899, when his successor, J. L. Calvert, of Guthrie, was elected. Mr. Calvert remained secretary from 1899 to January, 1901, inclusive.

As said before, Mr. Cunningham remained president to January, 1897, when John W. Shartel, of Oklahoma City, was elected president. Mr. Shartel was at that time attorney for the Atchison, Topeka and Santa Fe Railway Company, and has since been general attorney for the Choctaw, Oklahoma and Gulf, and has been prominent in all lines of city interest.

Judge J. C. Strang was elected president in January, 1899, and served through that year, and in January, 1900, was reelected to serve for one year. Judge Strang was a member of the Kansas supreme court before coming to Oklahoma. Since that time he has been county attorney of Logan County and Territorial attorney-general, and has been prominent throughout the Territory politically and professionally.

Judge Strang was followed as president by John H. Cotteral, of Guthrie, one of the prominent lawyers of the Territory. His term of office extended from January, 1901, to January, 1902. He was followed by W. S. Denton, of Enid, 1902 to 1903; he, in turn, by Jesse J. Dunn, of Alva, who held the office from 1903 to 1904. The present incumbent was elected January, 1904, and is Col. Roy V. Hoffman, of Chandler.

The present secretary of the association is Charles H. Woods, of Guthrie, who has held the office since January, 1901.

The treasurer of the association is S. S. Lawrence, of Guthrie, who has held that office since January, 1900.

The meetings of the association have always been held at Guthrie because of its being the capital and the seat of the supreme court, and usually at the time that the supreme court has its regular January term. Usually two days are given by the supreme court at the beginning of the term for the session of the association.

The membership of the association has grown from 30 or 40 members in 1890 to about 300 in 1904, and is composed of the more prominent attorneys in all the cities of the Territory.

The meetings of the association attract the general interest of the members because of the opportunity to listen to the carefully prepared papers, the reports of the committees, and, not least of all, because of the opportunity thus given to the attorneys to meet and become acquainted with their brother attorneys in other localities. This latter was of special value to lawyers living in a comparatively new community.

In addition to the regular programme rendered by members of the association an effort has always been made to secure the presence of some attorney who has attained interstate fame to deliver what is known as the "annual address." Among those who have so consented to address the association are William Jennings Bryan, John A. Atwood, of Leavenworth, Kans., and Samuel W. Moore, of Kansas City, Mo.

The programme of the January meeting, 1904, is given herewith as a sample of the character of the annual meetings:

JANUARY 6—1.30 P. M.

President's address, by Mr. Jesse J. Dunn, Alva.

"Lawyers, past and present," by Col. Roy V. Hoffman, Chandler.

"Oklahoma school lands," by Prof. Frederick S. Elder, University of Oklahoma, Norman, and Mr. John Golobie, Guthrie.

JANUARY 7.

"The law and the Indian," by Mr. John Palmer, Pawhuska.

"Sales of personal property in Oklahoma," by Mr. William A. Maurer, El Reno.

"Shakespeare, lawyer and poet," by Mr. F. C. Hunt, Stillwater.

"Humors of the law," by Mr. J. B. A. Robertson, Chandler; Mr. B. B. Blakeney, Tecumseh, and Mr. J. W. Quick, Perry.

The annual address, subject, "Comparative jurisprudence," by Mr. Samuel W. Moore, Kansas City, Mo.

This was followed by reports of standing committees, election of officers, general business of the association, and the annual banquet.

The chief value of the association to others than its members consists in its uniform efforts to raise the standard of the profession, by regulating admission to its ranks and insisting upon strictest observance of legal ethics by its members; also in closely watching proposed legislation affecting the Territory as a whole, and in recommending such legislation as the lawyer peculiarly knows the need of.

Foreshadowing the possible union of the Territory of Oklahoma with Indian Territory, steps are now being taken to consolidate the bar associations of the two Territories. This step will be for mutual good during the progress of the organization of the State and the legislation necessary and incident thereto.



The proceedings of the association, including the papers read and reports of committees, are printed each year and are not only distributed to the members but exchanged for the reports of the other bar associations in the United States.

The Oklahoma Bar Association keeps in touch with the American Bar Association and each year sends its quota of delegates to the meeting of the latter.

#### TELEGRAPH AND TELEPHONE COMPANIES.

The Western Union and Postal Telegraph companies have extensive interests throughout the Territory, and each has made extensions and improvements in the various counties.

Telephone wires, both public and private, completely cobweb the Territory, connecting all cities and towns and many farm residences.

The following is a complete list of the telephone companies which have been incorporated in the past:

Wakita Telephone Company, R. C. Rhine Telephone Company, C. B. Wilson Telephone Company, Blaine County Telephone Company, B. M. and R. Telephone Company, Central Oklahoma Telephone Company, Cherokee Nation Telephone Company, Coulter Construction Telephone Company, Eagle Telephone Company, Francis Western Telephone Company, Geary Telephone Company, Guthrie Telephone Company, Long Distance Telephone Company, The Pioneer Telephone Company, Quapaw Valley Telephone Company, S. S. S. Telephone Company, Shawnee Telephone Company, Southern Telephone Company, Southwestern Telephone Company, Oklahoma Southwestern Telephone Company, Texas Telephone Company, W. W. Oder Telephone Company, Washita Valley Telephone Company, Grand Telephone and Telegraph Company, Ames Telephone System, Home Enterprise Telephone Company, Topeka and El Reno Telephone Company, Kingfisher (Okla.) Telephone Exchange, Mangum Telephone Company, Missouri and Kansas Telephone Company, Oklahoma and Kansas Telephone Company.

Of the above number, the following have reported as to their extensions and improvements during the past year:

The Pioneer Telephone and Telegraph Company: On February 13, 1904, the Pioneer Telephone and Telegraph Company, a corporation organized under the laws of Oklahoma, commenced doing business, and bought the property of the Pioneer Telephone Company, which had succeeded the Arkansas Valley Telephone Company; also bought the property of the Long Distance Telephone Company. It also bought telephone lines extending from Denison, Tex., to Wagoner, Ind. T., at that time, and since then bought the properties of the Indian Territory Telephone Company, the Muskogee National Telephone Company, the Weeleta and Fort Smith Telephone Company, the J. N. Coulter Construction Company, and the Guthrie Telephone Company, in which they had heretofore only owned one-half interest. During the past year all of these companies had built considerable telephone lines, and additional metallic telephone circuit was strung from El Reno, Okla., to South McAlester, Ind. T.; from Denison, Tex., to Wagoner, Ind. T.; from Oklahoma City to Stroud, and from Oklahoma City to Perry. Telephone lines formerly built with native oak poles have been rebuilt with cedar poles.

At this time the Pioneer Telephone and Telegraph Company operates 27 exchanges. They have toll stations at 250 towns in Oklahoma, Indian Territory, Kansas, Arkansas, and Texas, and operate at this time 1,500 miles of pole line and 5,000 miles of toll-line wire.

Arrangements are being made for extensive improvements in the way of additional circuits in order to better the service.

The Topeka and El Reno Telephone Company was organized in August, 1901, starting in to build a line from Chickasha to Anadarko, Anadarko to Lawton, Lawton to Marlow. From this starting out with a small capital stock, during

the fall the capital stock was made \$100,000, and the real construction of the lines and exchanges of the Topeka and El Reno Telephone Company began. During the year 1903, in order to make the necessary amount of extensions needed to carry out the system, the capital stock was increased to \$200,000.

The company now has 600 miles of toll lines running between and touching the following points: Anadarko, Apache, Bridgeport, Binger, Cement, Chickasha, Cordell, Cache, Chattanooga, Carnegie, Denton, Davidson, El Reno, Elgin, Frederick, Fort Cobb, Granite, Gotebo, Geronimo, Hobart, Hastings, Hinton, Headrick, Indianola, Laverty, Leger, Lawton, Lone Wolf, Mangum, Marlow, Minco, Manitou, Mountain Park, Mountain View, Pocasset, Richards, Rocky, Roosevelt, Sterling, Snyder, Siboney, Thornton, Temple, Union City, Vernon, Walters, Waurika, Wildman, Woodfil

They also have exchanges at the following points: El Reno, Lawton, Anadarko, Bridgeport, Chickasha, Mountain View, and Snyder.

The territory operated by the Topeka and El Reno Telephone Company contains practically all of the new country west, taking in Greer, Comanche, Kiowa, Washita, Caddo, and Canadian counties, and part of the Chickasaw Nation. It is the intention of this company to build extensions as fast as the territory will justify.

The Southwestern Telephone Company owns about 250 miles of telephone toll line in Oklahoma Territory and four exchanges, of which 33 miles of toll line, costing something over \$300 per mile, was constructed within the last year. The exchange at Enid, Okla., of about 600 phones, was practically built in the same time. This exchange alone cost about \$60,000. The exchange at Carmen and Cherokee, in Woods County, were also built during the last year and a half, and each have about 75 phones. The exchange at Alva was partially rebuilt during the last year. The Alva exchange has about 180 phones.

The Central Oklahoma Telephone Company has 350 miles of toll line, with the following exchanges: Okeene, Hennessey, Fairview, Cleo, and Taloga. Six miles of toll line and two exchanges were built during the past year.

The Texas Telephone Company has 74 miles of toll line in Comanche and Greer counties, with an exchange at Walter. Valuable improvements have been made on their lines during the year.

The Ames Telephone system has a mileage of 14½ miles, 6½ having been built during the past year. It connects three trading points in Woods and Garfield counties.

The Perryman Telephone Company has 40 miles of wire and an exchange at Morrison, Noble County.

The Spencer Telephone line has 30 miles in operation, 6 of which were built during the past year.

The Blaine County Telephone Company has 20 miles of line in operation.

The Quapaw Valley Telephone Company has 17 miles of wire, serving 14 patrons in the country.

The Kingfisher Telephone Exchange has 255 subscribers, 10 of which were added during the past year, and extensive improvements have been made.

#### BUILDING AND LOAN ASSOCIATIONS.

Several of the larger cities and towns have their local building and loan associations.

In addition to those heretofore reported, the following were incorporated during the past year: Mutual Building and Loan Association, Alva; Shawnee Building and Loan Association, Shawnee; El Reno Building and Loan Association, El Reno; Chandler Building and Loan Association, Chandler.

#### INSURANCE.

Below is given a statement of the secretary of the Territory, showing the amount of business done during the year 1903 by the various fire, life, casualty, and other companies licensed to do business in the Territory.

*Insurance companies authorized to transact business in Oklahoma for the year 1904.*

## FOREIGN FIRE INSURANCE COMPANIES.

Name of company.	Location.	Name of company.	Location.
Atlanta-Birmingham .....	Atlanta, Ga.	National Insurance .....	Dover, Del.
Austin .....	Austin, Tex.	National Union .....	Pittsburg, Pa.
Aetna .....	Hartford, Conn.	New York Underwriters Agency .....	New York, N. Y.
Anchor .....	Cincinnati, Ohio.	Niagara .....	Do.
American Central .....	St. Louis, Mo.	North British and Mercantile .....	London, England.
American .....	Philadelphia, Pa.	Northern Assurance .....	Do.
British America Assurance .....	Toronto, Canada.	Northwestern National .....	Milwaukee, Wis.
Citizens .....	St. Louis, Mo.	North German .....	New York, N. Y.
Commercial Union .....	London, England.	North River .....	Do.
Connecticut .....	Hartford, Conn.	Orient .....	Hartford, Conn.
Continental .....	New York, N. Y.	Pennsylvania Fire .....	Philadelphia, Pa.
Farmers and Merchants .....	Lincoln, Nebr.	Phenix .....	Brooklyn, N. Y.
Fire Association .....	Philadelphia, Pa.	Phoenix Assurance .....	London, England.
Firemen's Fund .....	San Francisco, Cal.	Phoenix .....	Hartford, Conn.
German .....	Freeport, Ill.	Providence Washington .....	Providence, R. I.
German Alliance .....	New York, N. Y.	Philadelphia Underwriters .....	Philadelphia, Pa.
German American .....	Do.	Prussian National .....	Stettin, Germany.
Germania .....	Do.	Queen .....	New York, N. Y.
Hamburg-Bremen .....	Hamburg, Germany.	Rochester German .....	Rochester, N. Y.
Hanover .....	New York, N. Y.	Royal .....	Liverpool, England.
Hartford Fire .....	Hartford, Conn.	St. Paul Fire and Marine .....	St. Paul, Minn.
Home .....	New York, N. Y.	Scottish Union and National .....	Edinburgh, Scotland
Insurance Company of North America .....	Philadelphia, Pa.	Shawnee .....	Topeka, Kans.
Liverpool, London and Globe .....	Liverpool, England.	Springfield Fire and Marine .....	Springfield, Mass.
Do .....	New York, N. Y.	Sun .....	London, England.
London and Lancashire .....	Liverpool, England.	Traders .....	Chicago, Ill.
Manchester Assurance .....	Manchester, England.	Westchester .....	New York, N. Y.
Mercantile Fire and Marine .....	Boston, Mass.	Western Assurance .....	Toronto, Canada.
Milwaukee Mechanics .....	Milwaukee, Wis.	Williamsburgh City .....	Brooklyn, N. Y.
National Fire .....	Hartford, Conn.		

## FOREIGN LIFE COMPANIES.

Aetna .....	Hartford, Conn.	National of U. S. A .....	Washington, D. C.
Bankers' Reserve .....	Omaha, Nebr.	New York Life .....	New York, N. Y.
Des Moines Life .....	Des Moines, Iowa.	Northwestern Mutual .....	Milwaukee, Wis.
Equitable Life Assurance .....	New York, N. Y.	Northwestern Life and Savings .....	Des Moines, Iowa.
Fidelity Mutual .....	Philadelphia, Pa.	Northwestern National .....	Minneapolis, Minn.
Franklin .....	Springfield, Ill.	Pacific Mutual .....	San Francisco, Cal.
Hartford Life .....	Hartford, Conn.	Penn Mutual .....	Philadelphia, Pa.
Home Life .....	New York, N. Y.	Provident Savings .....	New York, N. Y.
Illinois Life .....	Chicago, Ill.	Prudential .....	Newark, N. J.
Kansas City Life .....	Kansas City, Mo.	Reliance Life .....	Pittsburg, Pa.
Manhattan Life .....	New York, N. Y.	Royal Union Mutual .....	Des Moines, Iowa.
Massachusetts Mutual .....	Springfield, Mass.	Security Mutual .....	New York, N. Y.
Missouri State .....	St. Louis, Mo.	Security Trust and Life .....	Do.
Minnesota Mutual .....	St. Paul, Minn.	State Life .....	Indianapolis, Ind.
Mutual Life of New York .....	New York, N. Y.	Union Central .....	Cincinnati, Ohio.
Mutual Benefit Life .....	Newark, N. J.	Wisconsin Life .....	Madison, Wis.
Mutual Reserve .....	New York, N. Y.		
National Life .....	Montpelier, Vt.		

## FOREIGN ACCIDENT AND HEALTH.

Aetna Indemnity .....	Hartford, Conn.	Preferred Accident .....	New York, N. Y.
Continental Casualty .....	Chicago, Ill.	Standard Life and Accident .....	Detroit, Mich.
Fidelity and Casualty .....	New York, N. Y.	Travelers .....	Hartford, Conn.
Maryland Casualty .....	Baltimore, Md.	United States Fidelity and Guarantee .....	Baltimore, Md.
North American Accident .....	Chicago, Ill.		
Ocean Accident and Guarantee .....	New York, N. Y.		



*Insurance companies authorized to transact business in Oklahoma, etc.—Cont'd.*

## FOREIGN MISCELLANEOUS.

Name of company.	Location.	Name of company.	Location.
Hartford Steam Boiler and Inspection.	Hartford, Conn.	New Jersey Plate Glass Insurance.	Newark, N. J.
Lloyd Plate Glass and Insurance.	New York, N. Y.	New York Plate Glass Insurance.	New York, N. Y.
Metropolitan Plate Glass	Do.		

## FOREIGN FRATERNALS.

A. O. U. W .....	Meadville, Pa.	Knights of the Protected Ark.	Topeka, Kans.
American Order of Protection.	Lincoln, Nebr.	Knights of the Maccabees.	Port Huron, Mich.
American Annuity Association.	Wichita, Kans.	Ladies of the Maccabees.	Do.
American Benevolent Association.	St. Louis, Mo.	Loyal Americans .....	Springfield, Ill.
American Guild .....	Richmond, Va.	Loyal Protective Association.	Boston, Mass.
Annuity Union .....	Topeka, Kans.	Modern Brotherhood of America.	Mason City, Iowa.
American Plowmen .....	Logansport, Ind.	Modern Woodmen of America.	Rock Island, Ill.
Ancient Order of the Pyramids.	Kansas City, Mo.	Mutual Protective League.	Litchfield, Ill.
Bankers' Union of the World.	Omaha, Nebr.	Modern Order of Prætorians.	Dallas, Tex.
Brotherhood American Yeomen.	Des Moines, Iowa.	Mystic Tailors .....	Des Moines, Iowa.
Court of Honor .....	Springfield, Ill.	National Masonic Accident Association.	Do.
Columbian Woodmen ..	Atlanta, Ga.	Order of Pendo .....	San Francisco, Cal.
Fraternal Mystic Circle.	Springfield, Ill.	Royal Fraternal Union ..	St. Louis, Mo.
Fraternal Tribunes .....	Rock Island, Ill.	Royal Neighbors .....	Rock Island, Ill.
Fraternal Union of America.	Denver, Colo.	Royal Arcanum .....	Boston, Mass.
Fraternal Choppers of America.	Des Moines, Iowa.	Supreme Tribe of Ben-Hur.	Crawfordsville, Ind.
Fraternal Home .....	Hamilton, Mo.	Triple Tie Benefit Association.	Clay Center, Kans.
Fraternal Aid Association.	Lawrence, Kans.	United Benevolent Association.	Fort Worth, Tex.
Fraternal Brotherhood ..	Los Angeles, Cal.	United Moderns .....	Denver, Colo.
Giant Oaks .....	Kansas City, Mo.	United States Protective Society.	St. Louis, Mo.
Ideal Reserve Association.	Detroit, Mich.	Western Bohemian Association.	Cedar Rapids, Mich.
Home Annuity Association.	St. Louis, Mo.	Western Mason Mutual Life.	Los Angeles, Cal.
Knights and Ladies of Security.	Topeka, Kans.	Woodmen Accident Association.	Lincoln, Nebr.
Knights of the Modern Maccabees.	Port Huron, Mich.	Woodmen of the World.	Omaha, Nebr.
Knights and Ladies of Honor.	Indianapolis, Ind.		
Knights Templars and Masons Life Ind. Co.	Chicago, Ill.		

## DOMESTIC FRATERNALS.

Home Relief Association.	Oklahoma City, Okla.	United Benevolent Association.	Oklahoma City, Okla.
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## DOMESTIC MUTUALS.

Oklahoma Farmers Mutual Indemnity Association.	El Reno, Okla.	Oklahoma Farmers Mutual Insurance.	Perry, Okla.
		State Mutual Insurance.	Medford, Okla.

*Statement of fire-insurance business transacted in Oklahoma.*

Name of company.	Premiums collected.	Losses paid.	Losses incurred.	Amount at risk.
Ætna.....	\$23,418.90	\$8,561.20	\$8,391.90	\$1,377,524
Anchor.....	3,414.68	440.65	1,040.65	130,736
American Central.....	11,919.85	4,403.17	4,591.97	1,340,521
American Fire.....	4,853.99	1,081.05	1,269.65	350,500
Austin.....	957.57	Nil.	Nil.	46,895
British America.....	5,262.38	1,045.91	1,467.79	328,288
Citizens.....	3,747.15	1,923.76	1,930.90	289,970
Commercial Union.....	5,639.60	1,457.48	1,457.48	451,775
Connecticut.....	42,531.00	22,207.00	30,013.00	2,540,781
Continental.....	47,207.21	20,528.11	20,997.11	3,783,792
Farmers and Merchants.....	3,817.77	Nil.	187.50	246,763
Fire Association.....	29,367.83	17,874.66	19,215.96	1,324,395
Fireman's Fund.....	9,049.14	9,850.85	7,642.37	1,779,278
German, of Freeport.....	9,291.43	3,642.32	4,167.32	698,577
German Alliance.....	15,373.50	17,694.04	17,635.78	876,784
German American.....	38,117.51	30,333.32	33,530.62	2,468,384
Greenwich.....	12,318.25	9,022.54	8,529.14	1,012,360
Germania.....	9,474.64	1,084.09	1,674.09	592,669
Hamburg Bremen.....	5,523.68	2,906.57	2,456.57	312,954
Hanover.....	12,926.02	6,971.70	8,810.20	1,062,381
Hartford.....	18,820.82	3,870.67	5,955.17	1,505,854
Home.....	64,142.18	32,266.17	34,222.00	7,351,429
Insurance Company of North America.....	22,754.27	15,230.18	17,410.89	1,137,278
Liverpool, London and Globe of London.....	25,590.06	19,455.83	19,430.83	2,605,521
Liverpool, London and Globe of New York.....	262.56	Nil.	Nil.	100,750
London and Lancashire.....	16,415.92	6,638.49	7,029.49	742,015
Manchester.....	6,700.47	5,032.75	5,782.75	401,723
Mercantile Fire and Marine.....	3,009.04	3,119.62	770.72	166,306
Milwaukee Mechanics'.....	10,544.55	2,076.86	2,078.86	571,358
National Fire.....	16,896.07	6,661.38	7,252.21	954,941
National Union.....	6,495.60	Nil.	3,525.00	258,524
National of Dover.....	1,970.58	Nil.	Nil.	132,748
Niagara.....	13,318.08	5,107.59	6,986.90	963,245
North British and Mercantile.....	14,375.40	6,015.33	5,983.33	1,288,553
Northern.....	4,474.25	1,118.42	1,809.42	310,731
Northwestern National.....	3,895.56	97.35	2,102.35	434,700
Orient.....	8,857.50	3,676.70	4,176.70	533,358
Pennsylvania.....	18,107.00	10,645.00	9,600.00	1,229,852
Phenix of Brooklyn.....	37,693.68	15,546.76	17,959.65	2,306,535
Phoenix Assurance.....	7,321.34	6,570.86	6,400.66	314,074
Phoenix of Hartford.....	12,440.45	9,337.30	9,771.31	930,165
Providence Washington.....	4,710.42	985.04	1,497.54	613,804
Prussian National.....	2,938.31	Nil.	Nil.	247,175
Queen.....	15,841.28	10,029.36	13,848.18	1,086,331
Royal.....	7,442.73	646.82	2,136.82	526,185
St. Paul Fire and Marine.....	85,236.37	24,864.22	25,871.51	4,457,766
Scottish Union and National.....	26,925.64	11,728.59	14,025.01	1,240,092
Shawnee.....	52,670.78	20,089.96	20,267.83	3,122,420
Springfield Fire and Marine.....	33,496.95	19,060.51	20,868.63	2,464,169
Sun.....	3,585.77	1,800.00	1,800.00	250,126
Traders.....	6,743.49	728.61	764.51	504,896
Westchester.....	6,003.38	2,531.92	2,781.92	435,446
Western Assurance.....	5,930.50	2,626.12	2,923.12	632,890
Williamsburgh City.....	2,062.84	14.10	14.10	135,500
Total.....	861,575.94	378,419.49	450,063.61	60,882,787

*Statement of total number of policies.*

Name.	Number in force Dec. 31, 1902.	Increased during 1903.	Terminated in 1903.	Total outstanding Dec. 31, 1903.
Ætna.....	123,002	15,221	8,125	130,098
Bankers Reserve.....	1,800	924	289	2,435
Des Moines Life.....	10,129	3,910	2,122	11,917
Equitable.....	450,905	121,776	65,716	513,965
Fidelity Mutual.....	43,664	12,172	6,137	49,699
Franklin.....	14,682	5,991	3,960	16,713
Hartford.....	40,251	7,210	6,882	40,579
Home.....	34,619	6,983	3,497	38,105
Illinois.....	17,968	10,059	5,275	22,752
Manhattan.....	30,297	6,461	4,059	32,699
Massachusetts Mutual.....	67,508	11,814	6,120	73,202
Missouri State.....	3,288	2,968	1,127	5,116
Minnesota Mutual.....	5,456	1,210	616	5,827
Mutual Life.....	543,194	98,865	43,087	598,972
Mutual Benefit.....	128,652	19,923	9,088	139,487
Mutual Reserve.....	64,701	14,180	18,097	60,912

*Statement of total number of policies—Continued.*

Name.	Number in force Dec. 31, 1902.	Increased during 1903.	Terminated in 1903.	Total outstanding Dec. 31, 1903.
National Life of Vermont.....	57,073	10,155	5,199	62,029
National Life, U. S. A.....	10,040	34,721	11,105	37,656
New York Life.....	704,567	172,652	64,508	812,711
Northwestern Mutual.....	262,094	34,095	15,769	280,443
Northwestern National.....	26,485	26,214	7,939	44,770
Pacific Mutual.....	24,121	13,321	7,256	30,186
Penn Mutual.....	111,836	23,598	10,367	125,057
Providence Savings.....	40,228	19,091	15,968	43,351
Prudential.....	4,692,182	1,468,230	983,956	5,176,456
Reliance.....		325	1	324
Royal Union Mutual.....	6,479	2,062	751	7,790
Security Mutual.....	19,594	10,918	8,441	22,071
State Life.....	13,227	10,308	6,288	17,247
Union Central.....	99,865	18,762	10,013	108,614
Wisconsin Life.....	1,157	778	295	1,640

*Statement of total insurance.*

Name.	Amount in force December 31, 1902.	Amount written in 1903.	Amount terminated in 1903.	Amount in force December 31, 1903.
Ætna.....	\$213,762,977	\$33,087,131	\$21,084,265	\$225,765,843
Bankers' Reserve.....	5,234,000	2,472,000	794,500	6,911,500
Des Moines Life.....	15,142,006	6,652,054	3,713,406	18,080,654
Equitable.....	1,292,446,595	322,547,968	204,575,821	1,409,918,742
Fidelity Mutual.....	90,097,572	22,621,904	12,378,929	100,340,547
Franklin.....	24,102,794	8,764,848	6,637,534	26,229,108
Hartford.....	71,758,395	12,660,056	11,131,904	73,286,547
Home.....	63,313,144	12,335,472	6,238,034	69,410,582
Illinois.....	30,143,975	15,552,354	9,170,193	36,526,136
Manhattan.....	67,519,305	16,913,364	11,790,682	72,641,987
Massachusetts Mutual.....	158,703,802	24,677,440	13,712,786	169,668,456
Missouri State.....	4,777,420	3,852,042	1,658,651	6,921,561
Minnesota Mutual.....	14,189,235	3,479,831	1,461,340	15,874,348
Mutual Life.....	1,340,748,659	215,102,648	110,622,626	1,445,228,681
Mutual Benefit.....	308,048,169	41,701,375	19,895,702	329,853,542
Mutual Reserve.....	127,960,188	14,501,501	22,913,638	119,596,827
National Life of Vermont.....	114,872,957	18,567,630	10,366,219	123,074,377
National Life, U. S. A.....	24,445,924	29,210,943	14,364,232	39,292,636
New York Life.....	1,553,628,026	329,975,034	138,290,161	1,745,212,899
Northwestern Mutual.....	620,681,283	80,355,422	38,071,501	662,851,194
Northwestern National.....	36,700,568	15,573,794	12,618,997	39,655,365
Pacific Mutual.....	40,842,473	16,719,704	8,888,767	48,673,410
Penn Mutual.....	268,891,773	53,323,395	23,884,810	298,330,358
Providence Savings.....	98,159,633	34,364,047	27,385,645	105,138,035
Prudential.....	251,563,574	102,822,648	37,063,319	317,322,903
Reliance.....		1,315,650	1,000	1,314,650
Royal Union Mutual.....	10,751,519	3,343,879	1,362,195	12,733,263
Security Mutual.....	36,336,866	17,175,560	11,125,642	42,386,784
State Life.....	39,541,688	25,623,486	15,437,378	49,713,796
Union Central.....	182,546,305	35,925,129	21,430,535	197,040,899
Wisconsin Life.....	1,600,722	1,194,725	409,500	2,385,947

*Statement of total number of policies in Oklahoma.*

Name.	Number in force Dec. 31, 1902.	Increased in 1903.	Terminated in 1903.	Number in force Dec. 31, 1903.
Ætna.....	13	35	5	43
Bankers' Reserve.....	(*)	64	(*)	64
Des Moines Life.....		22		22
Equitable.....	327	227	95	459
Fidelity Mutual.....	142	161	76	227
Franklin.....	329	411	220	520
Hartford.....	42	134	61	115
Home.....	9	6	1	14
Illinois.....	88	84	24	148
Manhattan.....	70	48	28	90
Massachusetts Mutual.....	174	92	47	219
Missouri State.....	55	338	51	342
Minnesota Mutual.....	6	3	1	8



*Statement of total number of policies in Oklahoma—Continued.*

Name.	Number in force Dec. 31, 1902.	Increased in 1903.	Terminated in 1903.	Number in force Dec. 31, 1903.
Mutual Life .....	1,581	1,369	513	2,437
Mutual Benefit .....	41	105	13	133
Mutual Reserve .....	122	37	29	130
National of Vt .....	20	62	14	68
National, U. S. A .....	22	234	55	201
New York Life .....	2,264	731	302	2,693
Northwestern Mutual .....	708	140	42	806
Northwestern National .....	95	403	40	458
Pacific Mutual .....	77	220	49	248
Penn Mutual .....	(*)	24	1	23
Providence Savings .....	69	42	40	71
Prudential .....	91	56	19	128
Security Mutual .....	63	83	26	120
State Life .....	36	163	33	166
Union Central .....	194	61	62	193
Wisconsin Life .....	(*)	39	(*)	39
Total .....	6,638	5,394	1,847	10,185

*Statement of total insurance in Oklahoma.*

Name.	Amount in force Dec. 31, 1902.	Amount written in 1903.	Amount terminated in 1903.	Amount in force Dec. 31, 1903.	Premiums collected.	Losses incurred.
Ætna .....	\$22,000	\$50,500	\$10,000	\$62,500	\$1,648.22	-----
Bankers Reserve .....	169,500	169,500	169,500	6,019.98	-----	-----
Des Moines Life .....	71,000	71,000	71,000	7,813.09	-----	\$2,000.00
Equitable .....	603,436	573,550	265,750	911,236	31,946.71	10,295.00
Fidelity Mutual .....	252,686	276,081	133,887	394,881	13,200.00	2,000.00
Franklin .....	540,695	544,590	354,335	730,950	24,322.59	8,075.50
Hartford .....	73,500	210,400	99,500	184,400	1,439.60	2,000.00
Home .....	16,774	14,500	2,000	29,274	3,646.90	-----
Illinois .....	130,596	124,034	36,025	218,605	6,138.87	1,000.00
Manhattan .....	99,750	67,800	45,000	122,550	4,489.52	-----
Massachusetts Mutual .....	480,752	227,731	99,209	609,274	21,440.51	33,429.00
Missouri State .....	79,500	472,910	73,505	478,905	17,415.84	-----
Minnesota Mutual .....	14,000	10,000	2,000	22,000	425.16	-----
Mutual Life .....	3,203,424	2,356,676	859,155	4,700,945	289,858.93	37,603.00
Mutual Benefit .....	76,082	252,336	36,912	291,506	11,058.57	10,000.00
Mutual Reserve .....	333,837	127,140	83,715	377,262	11,703.00	887.61
National of Vermont .....	26,655	82,187	18,109	90,733	2,868.35	-----
National U. S. A .....	34,000	216,956	37,200	213,756	8,635.34	-----
New York Life .....	4,610,694	1,427,712	679,233	5,359,173	211,428.00	65,414.88
Northwestern Mutual .....	1,384,989	279,000	149,665	1,514,324	46,354.78	33,473.00
Northwestern National .....	84,227	822,533	83,317	823,443	29,632.53	3,000.00
Pacific Mutual .....	129,500	274,500	70,186	353,814	10,490.25	-----
Penn Mutual .....	-----	59,500	3,000	36,500	628.53	-----
Provident Savings .....	315,390	161,355	147,559	329,186	12,358.58	-----
Prudential .....	194,253	136,197	59,155	291,295	9,325.09	1,200.00
Security Mutual .....	103,285	118,773	51,396	170,722	2,878.14	-----
State Life .....	121,780	751,909	102,400	771,280	16,768.29	10,000.00
Union Central .....	316,500	97,825	83,700	330,625	10,062.08	3,021.79
Wisconsin Life .....	-----	63,500	-----	63,500	2,051.16	-----
Total .....	13,248,305	10,020,686	3,565,853	19,402,769	816,678.59	222,199.78

## ACCIDENT.

Name.	Premiums collected.	Losses paid.	Losses incurred.
Ætna .....	\$1,497.86	\$3,285.02	\$9,272.15
Continental Casualty .....	8,768.95	4,410.00	4,494.00
Fidelity and Casualty .....	3,764.74	1,008.11	1,008.11
Maryland Casualty .....	2,790.57	1,852.94	1,852.94
North American Accident .....	69.13	2,700.00	2,700.00
Ocean Accident and Guaranty .....	345.00	18.19	18.19
Preferred Accident .....	515.00	110.00	185.00
Pacific Mutual Life .....	2,031.31	2,264.25	2,264.25
Standard Life and Accident .....	5,748.56	407.23	407.23
Travelers .....	3,403.55	754.28	754.28
Total .....	28,934.67	16,810.02	22,956.15

*Statement of total insurance in Oklahoma—Continued.*

## HEALTH.

Name.	Premiums collected.	Losses paid.	Losses incurred.
<i>Ætna</i> .....		\$35. 71	\$35. 71
Fidelity and Casualty .....	\$2,069. 70	516. 06	516. 06
Maryland Casualty .....	289. 49	125. 57	125. 57
Preferred Accident .....	67. 00		
Standard Life and Accident .....	73. 00	6. 43	6. 43
Total .....	2,499. 19	683. 77	683. 77

## PLATE GLASS.

Fidelity and Casualty .....	\$1,323. 79	\$497. 06	\$497. 06
Lloyds Plate Glass .....	453. 96	197. 25	197. 25
Maryland Casualty .....	897. 17	270. 30	270. 30
Metropolitan Plate Glass .....	1,216. 36	790. 71	790. 71
New Jersey Plate Glass .....	653. 00	364. 70	364. 70
Total .....	4,494. 28	2,120. 02	2,120. 02

## STEAM BOILER.

Fidelity and Casualty .....	\$211. 00		
Hartford Steam Boiler .....	2,764. 94	\$75. 00	\$75. 00
Maryland Casualty .....	173. 60		
Ocean Accident and Guaranty .....	74. 48		
Total .....	3,224. 02	75. 00	75. 00

## BURGLARY.

<i>Aetna Indemnity</i> .....	\$24. 80		
Fidelity and Casualty .....	4,579. 00	\$4,053. 25	\$4,053. 25
Maryland Casualty .....	649. 49		
Ocean Accident and Guaranty .....	1,322. 86	16. 25	16. 25
Total .....	6,576. 15	4,069. 50	4,069. 50

*Statement of Oklahoma mutual fire insurance companies.*

## FIRE AND TORNADO.

Name.	Policies written in 1903.	Policies in force Dec. 31, 1903.	Premiums collected.	Reserve on hand.	Losses paid.
Farmers' Mutual Indemnity Association .....	2,005	2,699	\$32,280. 60	\$32,013. 75	\$2,822. 33
Farmers' Mutual Insurance Association .....	238	Nil.	2,365. 19		616. 00
State Mutual .....	278	550	5,810. 94	5,508. 32	356. 60

## HAIL.

Farmers' Mutual Indemnity Association .....	930		\$22,519. 22		\$16,278. 95
Farmers' Mutual Insurance Association .....	923		15,649. 80		11,198. 94
State Mutual .....	708		13,290. 74		10,793. 61

*Statement of business of fraternal companies in Oklahoma.*

Name.	Certificates written in 1903.	Number lapsed.	Number in force Dec. 31, 1903.	Number assessments collected in 1903.	Total assessments
Ancient Order of United Workmen.....	319	-----	3,817	9	\$44,712.81
American Annuity Association.....	-----	-----	-----	-----	-----
American Benevolent Association.....	87	77	59	12	820.30
American Guild.....	169	6	223	-----	827.50
Annuity Union.....	26	24	26	-----	-----
American Plowmen.....	93	27	138	-----	-----
Brotherhood of American Yeomen.....	84	46	226	-----	1,780.45
Court of Honor.....	162	134	126	-----	-----
Fraternal Union of America.....	39	247	234	-----	2,457.00
Fraternal Mystic Circle.....	3	64	12	12	565.83
Fraternal Aid Association.....	166	101	701	12	7,390.53
Fraternal Tribunes.....	85	6	79	-----	55.13
Home Relief Association.....	308	-----	-----	-----	1,078.00
Knights of the Protected Ark.....	30	57	26	12	642.80
Knights and Ladies of Honor.....	151	49	102	-----	420.92
Knights of the Maccabees.....	222	208	336	-----	5,267.75
Knights and Ladies of Security.....	636	345	1,014	-----	6,775.95
Ladies of the Maccabees.....	124	9	190	-----	1,328.55
Loyal Protective Association.....	34	-----	-----	-----	-----
Mutual Protective League.....	25	23	182	12	1,971.14
Mystic Toilers.....	7	2	5	-----	-----
Modern Order of Praetorians.....	15	15	-----	1	3.35
Modern Woodmen of America.....	2,523	2,272	10,513	-----	104,289.25
National Masonic Accident.....	107	139	91	-----	-----
Royal Fraternal Union.....	2	5	3	12	63.27
Supreme Tribe of Ben Hur.....	37	25	22	-----	414.50
Triple Tie Benefit Association.....	648	382	266	12	1,825.75
United Benevolent Association.....	1,573	1,069	611	-----	-----
Woodmen of the World.....	1,223	786	3,501	12	45,432.14
Western Bohemian.....	68	13	344	-----	1,993.50
Woodmen Accident.....	5	14	30	-----	-----

## CHURCHES AND FRATERNAL SOCIETIES.

The statistics given below have been furnished me by the various church societies in the Territory and evidence a very satisfactory growth. Many fine church edifices have been erected in several of the cities and towns during the year. Nearly all denominations are represented in the Territory.

Fraternal organizations have thrived especially well in Oklahoma and have a large membership.

## PROTESTANT EPISCOPAL CHURCH.

Church buildings.....	18
Value of church buildings.....	\$42,000
Rectories.....	8
Value of rectories.....	\$11,000
Organized missions.....	19
Other regular stations.....	10
Communicants.....	891
Clergy.....	13
Sunday schools.....	16
Membership of Sunday schools.....	361

## METHODIST EPISCOPAL CHURCH.

Church buildings.....	193
Value of church buildings.....	\$350,000
Parsonages.....	106
Value of parsonages.....	\$63,500
Members.....	18,580
Pastoral charges.....	176
Sunday schools.....	240
Officers and teachers.....	1,800
Scholars.....	18,000



## METHODIST EPISCOPAL CHURCH SOUTH.

Pastoral charges .....	81
Presiding elders .....	6
Pastors .....	81
Local preachers .....	65
Members .....	10, 691
Additions .....	1, 240
Value of church buildings .....	\$90, 300
Church buildings .....	90
Value of parsonages .....	\$20, 000
Parsonages .....	50
Epworth League societies .....	52
Epworth League membership .....	1, 262
Sunday schools .....	108
Officers and teachers .....	701
Scholars .....	6, 012
Organized societies .....	198

## PRESBYTERIAN CHURCH.

Church buildings .....	50
Value of church buildings .....	\$125, 000
Manse .....	17
Value of manse .....	\$27, 000
Church membership .....	4, 000
Ministers .....	53
Organized churches .....	66
Sunday schools .....	49
Membership of Sunday schools .....	4, 200

## BAPTIST CHURCH.

Church buildings .....	150
Value of church buildings .....	\$150, 000
Parsonage .....	50
Value of parsonage .....	\$25, 000
Church membership .....	16, 000
Ministers .....	500
Organized missions .....	100
Sunday schools .....	200
Membership of Sunday schools .....	15, 000

## CONGREGATIONAL CHURCH.

Church buildings .....	75
Value of church buildings .....	\$150, 000
Parsonage .....	32
Value of parsonage .....	\$25, 000
Church membership .....	2, 700
Ministers .....	50
Organized missions .....	83
Other preaching stations .....	17
Sunday schools .....	125
Membership of Sunday schools .....	4, 399
Young People's Societies of Christian Endeavor .....	35
Membership of Young People's Societies of Christian Endeavor .....	1, 000

## FRIENDS.

Church buildings .....	18
Value of church buildings .....	\$10, 000
Parsonage .....	8
Value of parsonage .....	\$4, 000
Church membership .....	1, 500
Indian members .....	150
Indian missions .....	5
Ministers .....	28
Sunday schools .....	11
Membership of Sunday schools .....	1, 300

## CHRISTIAN CHURCH.

Church organizations .....	317
Church buildings .....	123
Membership .....	18, 000
Preachers .....	154
Young People's Societies of Christian Endeavor .....	68
Young People's Societies of Christian Endeavor members .....	2, 312
Sunday schools .....	195
Value of church buildings .....	\$240, 000

## ROMAN CATHOLIC CHURCH.

Bishop .....	1
Churches .....	52
Priests .....	31
Chapels .....	11
Stations visited .....	109
New residences for priests .....	3
Church membership .....	20, 000
Academies .....	2
Schools for boys and girls .....	17
Schools for colored .....	2
Convents .....	15
Monastery .....	1
Hospital .....	1
Value of school and church property .....	\$250, 000
Sunday schools .....	70

## MEMBERSHIP OF COLORED CHURCHES.

Missionary Baptist .....	8, 682
African Methodist Episcopal church .....	3, 640
Colored Methodist Episcopal church .....	820
Methodist Episcopal church (colored wing) .....	840
Primitive Baptist .....	486
Colored Presbyterian .....	141
Congregational .....	412
Church of God .....	201

## YOUNG PEOPLE'S SOCIETIES OF CHRISTIAN ENDEAVOR.

Societies .....	237
Members .....	8, 058
Junior societies .....	67
Members .....	1, 675
Total societies .....	304
Total members .....	9, 733
*New societies organized during year ending June 30, 1904 .....	46

## SUNDAY SCHOOLS.

Schools .....	1, 500
Officers and teachers .....	10, 000
Scholars .....	80, 000

*Fraternal organizations.*

Name of order.	Organi- zations.	New or- ganiza- tions.	Mem- bers.	New mem- bers.	Value of property.
Masons .....	111	19	5, 219	1, 072	
A. O. U. W. ....	92	1	3, 542	372	\$1, 200. 00
Odd Fellows .....	188	36	10, 101	1, 080	94, 541. 00
K. of P. ....	61	12	3, 194	450	3, 000. 00
W. O. W. ....	116	1	3, 583	195	
G. A. R. ....	74	6	1, 644	110	2, 408. 65
Confederate Veterans .....	9	2	2, 116	115	
Eastern Star .....	46	12	2, 220	812	833. 16
Order of Elks .....	6	1	864	258	18, 654. 16
W. C. T. U. ....	150	40	2, 035	321	
Women's Federated Clubs .....	75	30	1, 900	600	
Women's Relief Corps .....	35	1	831	97	1, 687. 00
Rebekah Lodges .....	105	21	4, 977	972	6, 496. 00
Knights Templar .....	8		498		1, 000. 00
Scottish Rite Masons .....	1		802	290	75, 000. 00

## CHILOCCO AGRICULTURAL SCHOOL.

The Chilocco Agricultural School has made a great stride forward in the past year, and the term just closed has been most successful. The average attendance for the year has been 720. In point of attendance, equipment, and importance as an educational institution for Indians, Chilocco is now second to none. No other Indian school in the country has as good facilities for imparting a practical knowledge of agricultural pursuits. The Department of Indian Affairs has come to look upon the teaching of agriculture as the best means possible for preparing Indian youth to become self-supporting, and as the Chilocco school possesses an immense farm in the heart of a good agricultural country special efforts have been made to build this school up and make it the best in the country. Many improvements in the school plant were made the last year, including the erection of several new buildings. This plant now consists of some thirty-five buildings, and appropriations have been made for extensive improvements the coming year.

While agricultural instruction, stock raising, dairying, etc., are being made the leading features, instruction is also given in most of the trades. For the girls the domestic arts, such as sewing, dress-making, baking, cooking, housekeeping, laundering, etc., are given a great deal of attention. A good literary course is also required to be taken by all pupils. Military instruction and discipline are enforced, athletics are encouraged, and religious instruction not neglected.

The pupils educated at this school come from almost every State west of the Mississippi River, some forty different Indian tribes being represented.

The annual appropriations made by Congress for the maintenance of the school are from \$140,000 to \$175,000.

**PART III.**

Reports of Federal officials.

Public land offices.

Internal revenue.

Indian agencies.

Roster of Federal officials.

**PUBLIC LANDS.**

There is still some vacant land in Oklahoma. The exact amount in each county can be seen by referring to the various lists herewith attached, which have been furnished me by the officers in charge of the different land offices. The Territory is now divided into seven districts, two having been combined during the past year—Oklahoma City with Guthrie.

The greater portion of the land remaining unappropriated is best fitted for grazing purposes, as much of it is either hilly and rough, sandy, covered with saline or gypsum deposits, or rocky and unfit for cultivation. A considerable portion is situated above an altitude of 2,500 feet and has a consequent small rainfall. This portion of the country is chiefly devoted to live-stock interests, as the native grasses are very nutritious and supply pasturage during the entire year.



During the past year 1,500,012 acres have been filed upon by the homesteader, leaving 2,095,427 acres unoccupied.

## ALVA LAND DISTRICT.

[W. H. Cofield, register. A. R. Museller, receiver.]

This district, while not the largest, is composed of but one county, Woods. The vacant land is either broken, sandy, or mountainous.

	Acres.
Total area .....	1, 732, 000
Area reserved .....	17, 093
Area appropriated .....	1, 676, 430
Area unappropriated .....	38, 477
Number of acres filed on during year ended June 30, 1904 .....	5, 439

## EL RENO LAND DISTRICT.

[James A. Sickles, register. Thomas R. Reid, receiver.]

Area of district, 2,749,141 acres.

During the year ending June 30, 1904, there were 51,418.17 acres filed on.

County.	Unappropriated.	Reserved.	Appropriated.	Total area.
	Acres.	Acres.	Acres.	Acres.
Blaine .....	22		76, 138	76, 160
Canadian .....	817	26, 080	255, 063	281, 960
Custer .....	37		332, 123	332, 160
Caddo .....	2, 707	31, 411	917, 223	951, 341
Kiowa .....	2, 650	21, 760	437, 670	462, 080
Washita .....		3, 200	642, 240	645, 440
Total .....	6, 233	82, 451	2, 660, 457	2, 749, 141

## GUTHRIE LAND DISTRICT.

[J. J. Boles, register. Wm. D. Hodge, receiver.]

Area of district, 4,211,630 square acres.

This district is composed of nine thickly settled counties, in which there are but 90 acres of unoccupied land.

County.	Area unappropriated.	Area appropriated.	Area reserved.	Total area.
Canadian .....		147, 255	8, 375	155, 630
Cleveland .....		268, 000	80, 000	348, 000
Kay .....		425, 421	46, 579	472, 000
Lincoln .....	32	444, 346	174, 622	619, 000
Logan .....		343, 106	16, 894	360, 000
Noble .....		468, 655	30, 345	499, 000
Oklahoma .....		404, 160	35, 840	440, 000
Pawnee .....	58	301, 993	30, 949	333, 000
Payne .....		417, 164	66, 836	484, 000
Pottawatomie .....		227, 780	273, 220	501, 000
Total .....	90	3, 447, 880	763, 660	4, 211, 630

## KINGFISHER LAND DISTRICT.

[E. E. Brownlee, register. J. V. Admire, receiver.]

Area of district, 4,421,000 square acres.

During the year ending June 30, 1904, there were 135,031.54 acres filed on.

County.	Area unappropriated.	Area appropriated.	Area reserved.	Total area.
Blaine .....	301	518,549	150	519,000
Canadian .....		139,000		139,000
Custer .....	700	308,660	640	310,000
Dewey .....	3,658	633,342		637,000
Day .....	74,020	591,980		666,000
Grant .....		672,000		672,000
Garfield .....		640,000		640,000
Kingfisher .....		568,000		568,000
Logan .....		112,000		112,000
Oklahoma .....		23,000		23,000
Roger Mills .....	5,667	129,333		135,000
Total .....	84,346	4,335,864	790	4,421,000

## LAWTON LAND DISTRICT.

[H. D. McKnight, register. J. D. McGuire, receiver.]

Area of district, 2,120,000 square acres.

During the year ending June 30, 1904, there were 51,501.34 acres filed on.

County.	Area unappropriated.	Area appropriated.	Area reserved.	Total area.
Comanche .....	13,852	1,239,428	591,720	1,845,000
Kiowa .....	1,502	272,178	1,320	275,000
Total .....	15,354	1,511,606	593,040	2,120,000

## MANGUM LAND DISTRICT.

[John A. Oliphant, register. John A. Trotter, receiver.]

Area of district, 2,133,575 square acres.

During the year there were 159,943 acres filed on.

County.	Area unappropriated.	Area appropriated.	Area reserved.	Total area.
Greer .....	10,185	1,499,090	2,300	1,511,575
Roger Mills .....	3,420	594,320	24,260	622,000
Total .....	13,605	2,093,410	26,560	2,133,575

## WOODWARD LAND DISTRICT.

[F. S. Healey, register. E. S. Wiggins, receiver.]

County.	Area appropriated.	Area unappropriated.	Area filed on for year ending June 30, 1904.	Area reserved.	Total area.
Beaver .....	1,842,970	1,838,030	899,679		3,681,000
Woodward .....	2,023,028	99,232	197,000	1,680	2,124,000
Total .....	3,865,998	1,937,262	1,096,679	1,680	5,805,000

Messrs. Healy and Wiggins, register and receiver, respectively, speak thus enthusiastically of this district:

The class of settlers are above the average and full of hope and enterprise, just such people as it takes to build up a country, morally as well as financially. Only a few years ago a person could travel for many miles and the only life that could be seen were strings of cattle going to and from water. Now we see in their stead droves of nicely clad men, women, and children going to and from schools and churches, apparently satisfied with themselves and their surroundings.

*Climate.*—There is no doubt that we have one of the healthiest parts of the United States. In fact, the pure air almost brings the dead to life.

## INTERNAL REVENUE.

[J. M. Simpson, collector.]

There was collected in Oklahoma Territory for the year ending June 30, 1904, \$74,397.63, as follows:

From beer, at the rate of \$1 per barrel	\$12,845.00
From spirits, at the rate of \$1 per gallon	15,977.83
From cigars, at the rate of \$3 per 1,000	9,224.87
From tobacco, at the rate of 6 cents per pound	164.59
From special taxes for sale of spirits, beer, and oleomargarine	35,227.10
From penalties, etc	958.24
Total	74,397.63

## INDIANS.

The total number of Indians in the Territory as reported by the various agents and superintendents is now 11,945.

In addition to the above are some 300 Apaches being held at Fort Sill as prisoners of war.

Pawnee Agency	633
Osage Agency:	
Osage	1,895
Kaw	247
White Eagle Agency:	
Poncas	568
Otoes	367
Tonkawas	52
Sac and Fox Agency:	
Sac and Fox	491
Iowas	90
Pottawatomie	1,686
Shawnee	687
Kickapoo	247
Darlington Agency:	
Cheyenne	776
Arapahoe	521
Kiowa Agency:	
Apache	158
Kiowa	1,161
Comanche	1,401
Wichita	433
Caddo	532



## PAWNEE AGENCY AND TRAINING SCHOOL.

[George W. Nellis, superintendent and special disbursing agent.]

*Census.*—The census taken June 30, 1904, shows the Pawnee tribe to have decreased thirteen in number during the year. The population is as follows:

Males .....	303
Females .....	330
Total .....	633
Males 21 years of age and over .....	154
Females 18 years of age and over .....	180
Children over 5 and under 18 years of age .....	206

*Progress.*—The Pawnees are progressing slowly. The fact that they are now receiving more than \$125,000 annually from annuities, interest on trust funds, the lease of allotments and the sale of inherited lands, an average per capita of more than \$200, thus taking away the necessity of labor as a means of support, would seem to be sufficient reason for no progress whatever. On the other hand, such a condition of circumstances permitting them, as it does, to pass their time in idleness and still have means to indulge in all vices, would seem to make retrogression certain and advancement impossible. I think, however, that it can be truthfully stated that some progress is being made. More Indians are living upon and cultivating their allotments than ever before, and a greater acreage has been farmed.

Their corn crop has been conservatively estimated at over 45,000 bushels, their small grain at 1,500 bushels, and their yield of vegetables, including potatoes, at nearly 2,000 bushels. They have put up 1,350 tons of hay and have cut and sold 350 cords of wood. They own about 900 horses, about 250 head of cattle, 300 head of hogs, 500 sheep, and 1,750 domestic fowls. The farmers both state positively that farming among the Indians has been more general and more successful this year than at any time during their service among them.

*Liquor.*—A large portion of these Indians are addicted to the use of intoxicants. The agency lies within the corporate limits of the city of Pawnee, which has nine licensed saloons, most of them doubtless through boot leggers furnishing liquor to the Indians. Two of these saloons are notorious, but while a number of their boot leggers have been arrested and convicted, it has been impossible so far to get hold of the real criminals—the saloon keepers who employ the boot leggers. There have been eight prosecutions during the year, in which convictions were had, seven receiving sentences of \$100 fine and sixty days in jail, and one \$100 fine and two years in the penitentiary. There are now twelve men awaiting trial at the Federal jail in Guthrie for furnishing liquor to the Indians.

*Education.*—The Pawnee Training School is doing good work in both the academic and industrial departments. The employees are competent, industrious, and loyal to the school. The enrollment for the year was 139, the average attendance 120. The difference between the enrollment and the average attendance is accounted for by the fact that a number of the smaller boys were sent home after the burning of the boys' dormitory. Only those who could be accommodated in the hospital and kindergarten buildings were retained. Very little difficulty is experienced in keeping the Pawnee children in school. The people favor the school and offer little opposition either to the attendance of their children or to the maintenance of good discipline.

The burning of the boys' dormitory, which occurred on January 15, 1904, and the origin of which still remains a mystery, was a great misfortune to the school. This was by far the best building on the plant, in fact the only building with anything like modern conveniences. The girls' building is an old dilapidated affair, poorly constructed, badly arranged, unsanitary, inadequate in size, and with no modern appliances for heat, light, or ventilation. The second story of this building, in which the sleeping rooms are located, is very badly planned, having very low ceilings, and being so cut up with small halls running in all directions as to make it very improbable that the children could be gotten out of it without loss of life if a fire should occur in the nighttime. The class rooms are in this building, and they are very poorly adapted for the purpose. One is entirely too small and the other as much too large, and both are miserably lighted. It is not to be wondered at that many of these children are afflicted with chronic sore eyes. The same may be said so far as light and

general adaptability are concerned of the room used as the sewing room. The bath and lavatory facilities are also very poor and inadequate.

*Missionary work.*—The missionary work is being conducted among these Indians by Rev. A. G. Murray and his wife, who are under the direction of the presiding elder of the Methodist Episcopal Church in this district.

#### THE OSAGE INDIAN AGENCY.

[Frank Frantz, United States Indian agent.]

Until July 1, 1904, the agency embraced the Osage and Kaw (Kansa) Indian reservations, at which date the Kaw Reserve, with the subagency and boarding school pertaining thereto, was segregated and placed under a bonded superintendent.

The Osage Reservation is located between the Arkansas River on the west and south, the State of Kansas on the north, and the ninety-sixth meridian of longitude on the east, and has a mean elevation of 816 feet above sea level. The land is about 60 per cent prairie and 40 per cent timbered. The prairie soil is about half sandstone and half limestone, and is fertile, raising an abundance of wild grass, and when placed under cultivation is productive of large and varied crops. The timber lands consist of river bottoms and broken hills, and has been called by another writer the best and worst land of the reservation. The entire reservation is well watered by innumerable springs and streams that traverse its acres, many of which assume considerable proportions and abound with all kinds of fish found in this locality. The reservation has an area of 1,470,055 acres. The slope of the land and general course of the streams are to the southeast.

The Kaw (Kansa) Reservation comprises an area of 100,141 acres. About 20 per cent of this reserve lies along the Arkansas River and is as fine land as can be found in the West. The balance is nearly all limestone upland unsurpassed in fertility as wheat land.

The reservation has been equally divided among the Kaw, or Kansa, Indians under an act of Congress dated July 1, 1902, each member having received about 406 acres, of which 160 acres is designated and considered as a homestead and is unalienable and nontaxable for a period of twenty-five years; the balance, about 246 acres, is nontaxable for a period of ten years, but can be alienated at any time under certain conditions and restrictions imposed by the Department. The tribe had a fund to their credit in the United States Treasury amounting to \$135,000, yielding an annual income of \$6,750. This fund, together with all moneys due the tribe at the time of allotment, has been individualized and will be gradually disbursed in the discretion of the Secretary of the Interior, each member receiving annually interest on whatever of his or her share remains in the Treasury. At the time of the allotment the approved roll contained 247 names, of which number only 218 were alive—89 full bloods and 129 mixed bloods.

*Osage population.*—A census of the Osage tribe at the close of the fiscal year 1904 shows a population as follows:

Males, all ages.....	946
Females, all ages.....	949
<b>Total .....</b>	<b>1,895</b>
 Males over 18 years.....	454
Males under 18 years.....	492
 Females over 14 years.....	531
Females under 14 years.....	418
 <b>Total of all ages.....</b>	<b>1,895</b>
Number between 6 and 16 years .....	594
Number not of school age .....	1,301
 <b>Full bloods, all ages and sex .....</b>	<b>838</b>
<b>Mixed bloods, all ages and sex .....</b>	<b>1,857</b>
 <b>Total .....</b>	<b>1,895</b>

A net increase during the year of 45 persons.



*Revenues.*—The Osage tribe of Indians are considered about the richest people as a tribe on the face of the globe. They have an annual income of \$418,611.39, being 5 per cent interest on the \$8,372,427.80 held in trust for them by the United States Treasury. To this is added about \$165,000 derived from lease of grazing lands, royalty from oil wells, etc. The amount from oil and gas royalties will greatly increase from this time, owing to increased development and facilities on account of pipe lines for reaching the market. This makes an annual income of about \$584,000. Out of this fund well-equipped schools are maintained, salaries of employees are paid, nearly all of the expense of the agency is met, and the residue paid per capita to the members of the tribe in quarterly installments. The division of interest money alone amounts to about \$14 per month, or \$42 every three months to each man, woman, and child. To this may be added quite comfortable incomes to many individual members of the tribe, more progressive than others, from their homesteads and farms.

*Oil and gas.*—On the 16th day of March, 1896, a lease for ten years, covering the entire Osage Reservation, was given to Edwin B. Foster, for prospecting and mining for oil and gas, by the terms of which the nation is to receive as a royalty 10 per cent of all the oil produced and \$50 per annum for each gas well that may be discovered and utilized. Until recently nothing was done under this lease other than that absolutely necessary to prevent the cancellation of the contract. About three years ago, by assignment, the Indian Territory Illuminating Oil Company became the sole owner of this lease, since which time much more activity in the way of prospecting and developing has been demonstrated, especially so in the year just past.

In the fall of 1903 the Pawhuska Oil and Gas Company developed a strong gas well within 1½ miles of the agency headquarters, and now the town of Pawhuska is furnished with light and heat from this source and it is hoped that all agency and school buildings will be using natural gas for light and heat, an arrangement that will be a source of great comfort and convenience as well as a wonderful saving in expense.

*Railroads and telephones.*—Two railroad companies—the Missouri, Kansas and Texas, and the Eastern Oklahoma, a part of the Atchison, Topeka and Santa Fe—have completed their lines across the reservation and established stations and sidings at convenient points. Nelagony (an Indian name meaning "good water"), on the Missouri, Kansas and Texas, gives the agency a station within 7 miles, while heretofore the nearest railroad point was nearly 30 miles away. Other railroads are knocking at the door of the reservation and several surveys have been made. It seems that more building within the boundaries of the reserve during the ensuing year is highly probable. Considerable telephone improvement has been done, and now the agency not only has telephonic communication with all principal outside points, but with all the important places within the boundaries of the reservation.

*Character.*—While I have not had the chance to judge the character of the Osage Indian in his home, he has the reputation of being a mild-mannered, good-humored, contented sort of a fellow, with an appetite for something good to eat and plenty of it. He has a good opinion of himself, and is ever jealous of his honor and integrity. The mixed bloods predominate in number, and among them are to be found some of as shrewd and progressive men as there are in the land. Like many of their red brothers, the appetite of some of the Osages for "red eye" is insatiable, and their thirst for intoxicants would be invaluable to a confirmed toper; yet from what I have seen up to the date of this report and from what I have been able to learn from those familiar with these people, I do not believe there is any more liquor drinking among them than there is among the same number of other residents of the United States, taking the population throughout.

*Churches.*—There are four churches at Pawhuska, viz. Methodist Episcopal, Episcopalian, Baptist, and Catholic, where religious services are held regularly. During the past year the Episcopalians and Baptists have built nice churches and have expended considerable money in improving their properties in Pawhuska.

*Sanitary.*—There were no deaths among the pupils while in school, and have been none in three and one-half years.

There has been only one at the St. Louis School during that time. This school is kept in a good sanitary condition. The building compares very favorably with the Government girls' dormitory. It, too, has a good, healthful loca-



tion. An epidemic of measles was followed by a number of cases of pneumonia at the St. Louis School. Children are generally hearty at both places.

*Schools.*—Two schools have been maintained under the supervision of the agent throughout the year—the Osage Boarding School at Pawhuska and the Kaw Boarding School at the Kaw Subagency. Besides the Indian children who attended these schools a large majority of those of school age were enrolled in the nonreservation schools, the two Catholic boarding schools on the reserve and several private schools in the reservation, besides quite a number attending different seminaries, academies, and colleges of the country. The education of the average Osage child is well looked after.

## WHITE EAGLE AGENCY.

[H. M. Noble, superintendent and special disbursing agent.]

I have the honor to forward you herewith data with reference to the Ponca and Tonkawa Indians under my charge as follows:

A census taken June 30, 1904, shows the population of the Ponca to be 270 males and 298 females, a total of 568 souls, an increase of 12 over the number one year ago. The Tonkawa have 23 males and 29 females, a total of 52, the same number as shown by the census of last year, the old members dying being supplanted by an equal number of children born. The Ponca children of school age number 139, all of whom, physically able, are in attendance at the Government schools. The Tonkawa have only 7 of school age and remain at home.

The following amount of money was disbursed by me to the Indians:

## Ponca:

Sale of inherited Indian land	\$188,649.47
Lease money from individual allotments	42,946.97
Tribal pasture lease money	9,000.00
Annuity money interest on trust funds	2,453.58
Paid to Indian employees	1,254.87
Freighting, sales of wood, etc	324.46
Total	244,629.35

## Otoe and Missouri (six months ending December 31, 1903):

Sale of inherited Indian land	45,917.00
Lease money from individual allotments	8,519.13
Tribal pasture money (lease)	5,000.00
Annuity money	9,996.25
Paid to Indian employees	419.19
Freighting	46.88
Total	69,898.45

## Tonkawas:

Sale of inherited Indian land	\$57,033.52
Lease money from individual allotments	11,225.00
Annuity money	1,285.78
Total	69,544.30

Aggregate total 384,072.10

The Poncas spent about \$12,000 for permanent improvements, \$68,000 for the necessities of life, \$64,000 was placed in the hands of legal guardians of minor heirs, and the balance of more than \$100,000 was spent in drinking, gambling, and general improvidence.

The Tonkawas spent nearly \$25,000 in permanent improvements, stock, and implements; for the necessities of life \$10,000, the balance being expended in the liquidation of old debts, etc. These people nearly all live in good substantial homes, are not addicted to the use of intoxicating liquors, and are undoubtedly the happiest, most contented people on the face of the earth.

The land possessed by the Poncas is unequalled in Oklahoma in fertility, being especially adapted to the raising of cereals, vegetables, and fruits; also stock raising. Under these conditions, and in a climate unsurpassed, receiving aid from the Government, one would expect to find a prosperous people, but, unfor-

unately, this can not be truly said. Indolence, improvidence, the use of intoxicating liquors, and gambling is bringing them to poverty and ruin, and the very causes that should make them wealthy seem to aggravate their down-hill tendencies.

However, in the midst of many discouraging conditions which obtain here, there seems to be some hope in the young men of the tribe who have been educated in the training schools which the Government has so beneficently provided for its wards. There seems to be an industrial awakening among these young fellows. They have cultivated over 1,400 acres of land and will harvest by careful estimate, 5,000 bushels of wheat, 1,400 bushels of oats, 35,000 bushels of corn, besides much garden truck. Merchants report increasing sales of farming implements to Indians this season. All this is a healthy sign of future progress in the right direction. When absolute necessity stares this people directly in the face (not many years hence), they will all work; they all know how.

The Otoe Reservation was segregated from this agency January 1, 1904, and placed under a bonded superintendent. By Congressional enactment, the boundaries of the Ponca and Otoe reservations were abolished, and the two reservations are now fully incorporated into the body politic of the Territory and nation. School districts have been organized and new public school buildings are in process of erection. The Indians are now full-fledged citizens and will vote at the coming elections. Many of our red brethren will doubtless fail in the transition to complete white man's civilization, but those that survive the crisis will come forth good American citizens in the best sense of the word.

As yet there are no churches on this reservation. A mission is maintained at the agency by the Women's Home Missionary Society of the Methodist Episcopal Church, the missionary, Rev. A. J. Simms, doing what he can for the uplifting of this people. The work is great and the workers mighty few. As the years go by a better class of people will occupy the land contiguous to the Indians than in the past, and missionary effort will receive more cooperation and the results will be greater. The number of Indian communicants is now 70.

The training school at this agency has been successfully carried on during the year. The enrollment reached 120, with an average attendance of 111. In connection with the literary work of the institution, the Indian pupils are instructed in industrial lines, especially in general housekeeping and in farming. The girls are instructed in laundering, cooking, and housekeeping under competent instructors. For the boys, we have a farm of 400 acres. During the present season, under the direction of a competent farmer, they planted 18 acres of wheat, 29 acres of oats, 50 acres of corn, 6 acres of Kaffir corn, 10 acres of alfalfa, 2 acres of sweet and pop corn, 2 acres of potatoes, 3 acres of garden, all of which is excellent. There are 140 acres of hay land and 120 acres of pasture, and 10 acres of orchard. The school herd consists of 55 head, 20 of which are milch cows, which the boys milk, the girls taking care of the milk, making the butter, etc. All the instruction given the Indian pupil has reference to future usefulness in practical everyday life.

In closing, I wish to express my appreciation for the assistance rendered me by the Federal officers, Hon. Horace Speed, United States district attorney; Hon. B. T. Hainer, United States district judge; and United States Marshal Fossett, in the corraling and prosecution of "boot-leggers" and other offenders of the Federal laws governing Indian affairs at this agency.

SAC AND FOX AGENCY.

[W. C. Kohlenberg, superintendent and special disbursing agent.]

The condition of affairs among these Indians is not as encouraging as it might be, considering the opportunities that the Indians have had for advancement in the way of becoming industrious, self-supporting citizens and useful and desirable members of society.

There are two tribes of Indians under my jurisdiction—the Iowas and Sacs and Foxes. Both tribes have taken their allotments, and the surplus lands have been opened to settlement. The allotments were made in 1891, the Iowa Indians each receiving 80 acres, the patents to which are held in trust by the Government for a period of twenty-five years. The Sac and Fox Indians each received 160 acres. The patents to half of each allotment were to have been held in trust by the Government for a period of five years, and on the other half for a period of twenty-five years. The five-year period on the first half



was afterwards extended ten years, making fifteen years from the date of allotment before a final patent will be given on the first 80 acres of each allotment. This fifteen-year period will expire in about two years. The allotments are mostly located along the Cimarron River and the North Fork of the Canadian, or near some other water course.

Few of the Indians are entirely self-supporting, in the sense that they earn their livelihood by the sweat of their brows. The proceeds derived from the leasing of their lands, which, together with an annuity amounting to over \$70 per capita, is enough to satisfy their wants, making it unnecessary for them to depend upon their own exertions for their daily bread.

While there are many Indians who do not earn a complete livelihood through their own efforts, yet the majority attempt to do something in the line of agriculture, and a number of them are very successful in this pursuit, managing their own allotments, and, in a few cases, the allotments of their wives or children in addition.

A large number of deceased Indians' allotments have been sold, and the proceeds of such sales turned over to the heirs. In a number of cases this money has been foolishly squandered, but in other cases the Indians have derived considerable benefits from such sales, and the money was wisely expended in improvements on allotments, etc.

One great drawback to the Indians farming their own allotments more extensively is that it is very difficult to get them to purchase the necessary farming implements. Therefore they lease most of their land, reserving only a part for their own use and benefit. The land is usually leased for a term of three or five years, and a great part of the consideration or rental on the land consists of improvements which the lessee places there, in addition to which there is usually a small cash rental. The principal idea is to have the land placed in such condition that the Indian can take possession after the expiration of the lease and earn a living.

The greatest bane of all is the drunkenness existing among the Iowas generally, and among the Sacs and Foxes to a large extent. It seems to be a very easy matter for the Indians to secure all the whisky they want in any of the towns in the vicinity where they live. On account of the unwillingness of the Indian to testify it is difficult to secure the arrest of a whisky seller, and popular opinion in this part of the country is such that when a whisky seller is brought to trial it is difficult to secure a conviction, for the reason that a jury seldom gives the same credence to an Indian's testimony that they give to a white man's.

All violations of law can be traced directly to the use of liquor among these Indians. It makes of them nothing but social outcasts. It destroys all desire for advancement and habits of industry that they may have gained through years of tuition. If it were not for this drunkenness the future of these Indians could be looked forward to with hope. I believe, however, that it is not increasing, but is decreasing to some extent.

Almost every child of school age was placed in some school the past year. The school located here had an average attendance of 83.5 for the year ending June 30, 1904. In addition to this number, a number of children are in attendance at Chilocco, Haskell Institute, and Carlisle Indian schools.

The census shows 90 Iowa Indians on June 30, 1904, as against 93 June 30, 1903. The decrease during the year was 3. There are now 40 males and 50 females.

The census of the Sac and Fox Indians shows that there were 491 on June 30, 1904, as against 492 on June 30, 1903, making a decrease of 1 during the year. There are now 229 males and 262 females.

On the whole, the work of the past year has been satisfactory, good results having been secured along several lines.

#### CHEYENNE AND ARAPAHO INDIAN AGENCY.

[Lient. Col. Geo. W. H. Stouch, superintendent and special disbursing agent.]

The agency is located on the North Canadian River about 4 miles northwest of El Reno, Okla., and is surrounded by beautiful groves of trees and has 40 buildings used for agency purposes, and has for the use and benefit of itself and schools about 26 sections of land reserved. The Arapaho school is also located at the agency and has 22 buildings. The Cheyenne school is 3 miles north of the agency and has 12 buildings, with attractive lawns, trees, and a natural



grove. The agency and schools have a good water system piped into the buildings for fire protection and the drinking water is furnished from springs.

Census:

Cheyennes -----	776
Arapahoes -----	521
Total -----	1, 297

of which 365 are of school age, viz, 5 to 18 years.

Income:

Rental of allotments -----	\$66, 329. 53
Interest on money in treasury -----	23, 100. 16
Hauling freight -----	212. 85
Produce of labor sold -----	4, 141. 00
Employed at agency and schools -----	7, 680. 00
Working on roads, etc -----	7, 999. 82
Sale of lands inherited from deceased Indians -----	137, 122. 52
Total -----	246, 585. 88

*Labor on roads and improvements.*—Of the \$8,000 authorized for the employment of Indians to work on roads and make improvements on the reservation all was expended except 18 cents, and the work done has been commended by all. The Indians were glad to avail themselves of the chance to earn this money and worked faithfully. Grading of agency and school grounds, repairs in farming districts, repairs to bridges, and 37½ miles of road repairing and new roads was accomplished. One hundred and eighty different Indians were at work. Two thousand three hundred and ninety days' work was done by the Indians with teams at the rate of \$2.50 per day. One thousand six hundred and twenty days' work was done by Indians alone (with shovel or pick) at the rate of \$1.25 per day.

*Agriculture.*—Six farmers are employed to instruct and advise the Indians in their farming operations and stock raising, and while the Indians are not farming extensively, it is hoped that in a few years they will be.

Seventeen thousand five hundred pounds of corn, 4,000 pounds of oats, 563 bushels of wheat, and a quantity of garden seed were issued to those Indians who had their ground prepared for planting. They raised 6,325 bushels of corn, 5,425 bushels of wheat, 1,665 bushels of oats, and 750 bushels of potatoes, besides garden vegetables, and cut 925 tons of hay.

They own 100 good work teams and 100 wagons. These teams are included in the following stock they own: 1,294 horses, 229 mules, 608 head of cattle, and 1,050 domestic fowls.

There was raised on the agency farm corn, wheat, oats, and hay valued at \$4,235; on the Cheyenne school farm oats, wheat, hay, sorghum, and stock valued at \$2,943.50, and on the Arapaho school farm oats, corn, wheat, rye, alfalfa, hay, and stock valued at \$2,007.70.

*Sale of deceased Indians' land.*—Fifty-four tracts of land containing about 160 acres each and 21 tracts containing about 80 acres each were sold during the year at an average of about \$13.28 per acre, the total amount received being \$137,122.52. This land was purchased by white farmers who intend to make their homes in this country. Some of the Indians used the money judiciously, paying their debts and buying horses and wagons, while others spent theirs foolishly.

*Customs.*—There is a decided improvement noted among these people year by year, and the old tribal customs are fast disappearing. All of the men wear citizens' clothes and the women wear calico dresses made according to the Indian style. It is a neat, modest dress and suitable to their wants in every respect.

Marriages are now being performed according to law except in a few cases, and then later legal marriage ceremony is performed.

Their morals are good and they are in the main intelligent, bright, and happy. Their worst evils are whisky, mescal, and borrowing money at a high rate of interest, frequently paying from 24 to 200 per cent interest, and sometimes a higher rate.

*Health.*—The health of the Indians in the main is encouraging, and they have been free from the visitation of any epidemic. The sanitary conditions

of the agency and schools is highly satisfactory and the health of the pupils has been usually good.

*Education.*—The Cheyenne Training School is for the Cheyennes and has a capacity of 140, the average attendance for the year being 140. The Arapaho Training School is for the Arapahoes and has a capacity of 150, the average attendance for the year being 103. At both of these schools the pupils receive literary and industrial training, each branch being evenly divided and receiving the same amount of attention. Good progress has been made in all the branches of the schools.

Thirty-three children of these tribes are attending the public schools and 36 are absent from the reservation attending Government schools.

*Missionaries.*—Their work has been of benefit to the Indians and they report that 307 have been baptized up to date, of which 233 are communicants.

#### KIOWA INDIAN AGENCY.

[Col. James F. Randlett, agent.]

The total census of Indians at this agency numbers 3,685, divided as follows:

Apache .....	158
Kiowa .....	1,161
Comanche .....	1,401
Wichita and affiliated bands.....	965
Total .....	3,685

During the past year, for the reason that there was less outside interference with the work of the agency, much good has been accomplished among the Indians under this jurisdiction. Many Indians are farming portions of their own allotments, while in one or two cases Indians have leased allotments of other Indians for farming purposes, paying cash rent therefor.

During last summer many of the Indians, especially those pertaining to the Wichita and affiliated bands, were constantly engaged in chopping cotton, and many are now engaged in the work of picking this crop for the homesteaders and lessees of Indian allotments.

Much good has resulted to the Indians of the agency from the efforts of the numerous Christian missionaries who work among them, and a marked increase is noted in the number of Indians that come to the office with the request for a license to be married in the "white man's road."

On April 1, 1904, there were 1,502 leases of Indian allotted lands of this agency in force, under which, on that date, \$52,002.62 was due and payable from the lessees, of which amount but \$414.50 remains delinquent. This is considered a very creditable showing, not only for the agency office, but also for the character of the citizenship of the new counties.

The three Government and four mission schools were filled last year to their fullest capacity, and all the employees connected with these several institutions deserve credit and praise for their earnest labor toward the end of making good citizens of the Indian youth.

There were but few tracts of inherited Indian lands sold during the past year, for the reason that the bids offered were not considered commensurate with the value of the lands sought to be purchased.

#### FEDERAL OFFICERS.

*United States attorney.*—Horace Speed.

*Assistant United States district attorneys.*—John W. Scothorn, Frank Hall, and H. D. McKnight.

*United States marshal.*—William B. Fossett.

*Registers and receivers, United States land offices.*—Guthrie, J. J. Boles and William D. Hodge; Kingfisher, E. E. Brownlee and J. V. Admire; Alva, W. H. Cofield and A. R. Museller; Woodward, F. S. Healey and E. S. Wiggins; Mangum, John A. Oliphant and John A. Trotter; El Reno, Thomas R. Reid and James A. Sickles; Lawton, H. D. McKnight and J. D. Maguire.

*United States Indian agents and superintendents.*—Osage, Frank Framtz, Pawhuska; Ponca and Otoe, Hugh M. Noble, White Eagle; Iowa, Sac and Fox, W. C. Kohlenberg, Sac and Fox Agency; Cheyenne and Arapaho, Maj. George W. Stouch, Darlington; Kiowa, Comanche, and Apache, Col. James F. Randlett, Anadarko; Pawnee, George W. Nellis, Pawnee.

#### PART IV.

##### Reports of Territorial officials:

Territorial secretary.  
Territorial treasurer.  
Territorial auditor.  
Territorial superintendent of public instruction.  
Territorial bank examiner.  
Territorial attorney-general.  
Territorial librarian.  
Territorial adjutant-general.  
Territorial oil inspector.  
Territorial fish and game warden.  
Territorial grain inspector.  
Territorial board of railway assessors.

##### Territorial board of equalization.

Territorial board for leasing school land.

Territorial board of health.

Territorial board of osteopathic examiners.

Territorial board of pharmacy.

Territorial board of dental examiners.

Oklahoma live stock sanitary commission.

The courts.

Official roster.

#### TERRITORIAL SECRETARY.

[William Grimes.]

During the past year there have been issued 597 notarial commissions, distributed among the various counties as shown below:

Beaver -----	19	Lincoln -----	31
Blaine -----	19	Logan -----	35
Canadian -----	23	Noble -----	19
Cleveland -----	12	Oklahoma -----	90
Custer -----	26	Pawnee -----	31
Day -----	6	Payne -----	14
Dewey -----	10	Pottawatomie -----	56
Garfield -----	28	Roger Mills -----	17
Grant -----	11	Washita -----	12
Greer -----	36	Woods -----	33
Kay -----	23	Woodward -----	32
Kingfisher -----	14		

Number of requisitions granted ----- 65

Number of requisitions honored ----- 42

##### *Amount of fees received and turned over to Territorial treasurer.*

Received from insurance ----- \$16,016.00

Received from corporations, notaries, and miscellaneous items ----- 7,452.80

Total ----- 23,468.80

##### *Classified list of corporations chartered.*

Churches -----	74
Banks -----	48
Mining companies -----	124
Oil companies -----	96
Railroads -----	16
Building and loan companies -----	4
Telephone companies -----	20
Mill and elevator companies -----	15
Mercantile and miscellaneous -----	464
Total -----	861



The total capitalization of the railroads chartered during the year was \$127,750,000.

## TERRITORIAL TREASURY.

[C. W. Rambo, treasurer.]

Following is a statement showing the amount of taxes collected, by counties, from July 1, 1903, to June 30, 1904; also a statement showing the receipts placed to the credit of the general revenue fund, from sources other than taxation; a statement showing the amount of taxes due for the different years, and the condition of the following accounts of Territorial institutions, and of the general revenue fund for the year ending June 30, 1904:

## GENERAL REVENUE FUND.

Warrants outstanding June 30, 1904-----	\$526, 065. 57
Cash on hand for redemption of warrants-----	31, 405. 74
Net general revenue fund indebtedness-----	494, 659. 83

## NORMAL SCHOOL FUND, OLD LEVY.

Cash on hand June 30, 1904-----	\$10, 024. 50
Warrants outstanding June 30, 1904-----	14. 18
Balance on hand-----	10, 010. 32

## NORMAL SCHOOL FUND TAX, 1903.

Warrants outstanding June 30, 1904-----	\$6, 737. 01
Cash on hand for redemption of warrants-----	1, 243. 10
Balance outstanding June 30, 1904-----	5, 493. 91

## NORMAL SCHOOL LEASE FUND.

Cash on hand June 30, 1904-----	\$5, 821. 16
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## NORMAL SCHOOL BUILDING FUND.

Warrants outstanding June 30, 1904-----	\$19, 139. 44
Cash on hand for redemption of warrants-----	2, 431. 44
Balance outstanding-----	16, 708. 00

## NORTHWESTERN NORMAL SCHOOL FUND, OLD LEVY.

Cash on hand June 30, 1904-----	\$8, 089. 29
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## NORTHWESTERN NORMAL SCHOOL LEASE FUND.

Cash on hand June 30, 1904-----	\$3, 279. 81
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## NORTHWESTERN NORMAL SCHOOL FUND TAX, 1903.

Warrants outstanding June 30, 1904-----	\$7, 265. 23
Cash on hand for redemption of warrants-----	2, 092. 01
Balance outstanding-----	5, 173. 22

## NORTHWESTERN NORMAL SCHOOL BUILDING FUND.

Warrants outstanding June 30, 1904 (interest not added)-----	\$76, 056. 87
Cash on hand for redemption of warrants-----	16, 089. 69
Balance outstanding-----	59, 967. 69

## SOUTHWESTERN NORMAL SCHOOL FUND TAX, 1903.

Warrants outstanding June 30, 1904-----	\$4, 240. 56
Cash on hand June 30, 1904-----	1, 821. 92
Balance outstanding-----	2, 418. 64

## SOUTHWESTERN NORMAL SCHOOL LEASE FUND.

Cash on hand June 30, 1904-----	\$1, 580. 50
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## SOUTHWESTERN NORMAL SCHOOL BUILDING FUND.

Cash on hand June 30, 1904-----	\$240. 95
Warrants outstanding June 30, 1904-----	92. 76
Balance on hand-----	148. 19

## BEAUTIFYING FUND FOR SOUTHWESTERN NORMAL SCHOOL.

Cash on hand June 30, 1904-----	\$2, 066. 47
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## UNIVERSITY FUND, OLD LEVY.

Cash on hand June 30, 1904-----	\$601. 00
Warrants outstanding June 30, 1904-----	14. 02
Balance on hand-----	586. 98

## UNIVERSITY FUND TAX, 1903.

Cash on hand June 30, 1904-----	\$3, 004. 21
Warrants outstanding June 30, 1904-----	80. 00
Balance on hand-----	2, 924. 21

## UNIVERSITY BUILDING FUND.

Cash on hand June 30, 1904-----	\$4, 654. 23
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## UNIVERSITY EQUIPMENT FUND.

Warrants outstanding June 30, 1904-----	\$8, 167. 88
Cash on hand June 30, 1904-----	2, 452. 16
Balance outstanding-----	5, 715. 72

## UNIVERSITY INSURANCE INDEMNITY FUND.

Cash on hand June 30, 1904-----	\$8, 169. 08
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## UNIVERSITY LIBRARY BUILDING FUND.

Cash on hand June 30, 1904-----	\$3, 368. 18
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## COLORED AGRICULTURAL AND NORMAL UNIVERSITY FUND, OLD LEVY.

Cash on hand June 30, 1904-----	\$1, 859. 14
Warrants outstanding June 30, 1904-----	28. 50
Balance on hand-----	1, 830. 64

## COLORED AGRICULTURAL AND NORMAL UNIVERSITY LEASE FUND.

Cash on hand June 30, 1904 .....	\$2,588.08
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## COLORED AGRICULTURAL AND NORMAL UNIVERSITY FUND TAX, 1903.

Warrants outstanding June 30, 1904 .....	\$4,633.77
Cash on hand June 30, 1904 .....	1,978.35
Balance outstanding .....	2,655.32

## COLORED AGRICULTURAL AND NORMAL UNIVERSITY BUILDING FUND.

Cash on hand June 30, 1904 .....	\$6,651.53
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## DEAF AND DUMB SCHOOL FUND, OLD LEVY.

Cash on hand June 30, 1904 .....	\$12,356.21
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## DEAF AND DUMB SCHOOL-FUND TAX, 1903.

Cash on hand June 30, 1904 .....	\$7,396.01
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## AGRICULTURAL AND MECHANICAL COLLEGE LEVY, OLD FUND.

Cash on hand June 30, 1904 .....	\$55.57
Warrants outstanding June 30, 1904 .....	2.11
Balance on hand .....	53.46

## AGRICULTURAL AND MECHANICAL COLLEGE LEVY FUND TAX, 1903.

Warrants outstanding June 30, 1904 .....	\$3,578.69
Cash on hand June 30, 1904 .....	1,270.66
Balance outstanding .....	2,308.03

## AGRICULTURAL AND MECHANICAL COLLEGE BUILDING FUND.

Cash on hand June 30, 1904 .....	\$1,853.55
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## UNIVERSITY PREPARATORY SCHOOL FUND, OLD LEVY.

Cash on hand June 30, 1904 .....	\$198.52
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## UNIVERSITY PREPARATORY SCHOOL FUND TAX, 1903.

Warrants outstanding June 30, 1904 .....	\$3,845.00
Cash on hand June 30, 1904 .....	1,144.44
Balance outstanding .....	2,700.56

## LIBRARY FUND.

Cash on hand June 30, 1904 .....	\$1,604.44
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*Statement showing the receipts from sources other than taxation, which have been placed to the credit of the general revenue fund for the year ending June 30, 1904.*

William Grimes, secretary of Oklahoma .....	\$23,468.80
Paul F. Cooper, bank examiner .....	2,320.00
F. A. Ashton, coal-oil inspector .....	5,995.36
Interest on daily balances .....	18,630.16
A. H. Van Vleet, Territorial geologist .....	140.00
Total .....	50,554.32



*Statement of taxes due for the different years.*

1891-92-----	\$10,391.29	1899-----	\$12,657.78
1893-----	13,012.59	1900-----	20,197.61
1894-----	17,114.84	1901-----	31,734.32
1895-----	48,073.37	1902-----	34,106.33
1896-----	2,724.09	1903-----	219,581.30
1897-----	21,915.73		
1898-----	19,083.51	Total-----	450,592.76

*Statement showing the amount of taxes collected, by counties, for different years.*

County.	1891-1899.	1900.	1901.	1902.	1903.	1904.	Total.
Beaver-----	\$7.00	\$1.60	\$27.51	\$6,611.59	\$6,506.13		\$13,153.83
Blaine-----	21.86	8.92	145.28	5,118.70	7,350.29		12,645.05
Canadian-----	44.41	3.34	11.59	9,113.46	13,034.96		22,207.76
Caddo-----				3,651.56	8,793.42		12,444.98
Comanche-----				4,635.06	14,414.29		18,449.35
Cleveland-----	8.04	18.00	117.36	5,211.60	9,765.64	\$2.22	15,122.86
Custer-----	1.14	69.87	72.06	5,951.14	7,345.61		13,439.82
Day-----		56.11	73.56	1,193.87	1,569.84		2,893.38
Dewey-----	17.37	14.48	42.70	2,152.27	3,745.73		5,972.55
Garfield-----	21.25	23.02	238.22	14,289.56	12,525.87		27,097.92
Grant-----				10,162.26	12,696.21		22,858.47
Greer-----				5,526.65	23,177.45		28,704.10
Kay-----	40.55	24.09	120.38	10,501.42	15,991.61		26,658.05
Kingfisher-----	2.36	4.82	48.06	7,995.74	13,379.58		21,430.56
Kiowa-----				7,874.21	6,840.68		14,714.89
Lincoln-----	29.67	28.76	266.97	7,922.23	13,810.90		22,058.53
Logan-----	45.99	11.09	46.97	16,084.63	16,715.53		33,904.21
Noble-----		2.10	71.75	8,163.59	7,272.94		15,510.38
Oklahoma-----	4.15	8.38	102.08	13,827.43	23,577.21		37,519.25
Payne-----		127.07	639.20	10,118.89	11,998.29		22,883.45
Pawnee-----	652.83	227.44	385.36	6,985.64	9,124.38		17,375.65
Pottawatomie-----	67.80	20.55	67.18	4,446.43	17,414.62		22,016.58
Roger Mills-----	2.69	.08	1.36	4,997.84	3,959.78		8,961.75
Washita-----	7.04	2.57	18.70	5,820.88	9,789.60		15,638.79
Woods-----	5.26	9.83	449.82	22,729.32	26,829.84		50,024.07
Woodward-----	15.88	14.78	141.35	5,579.59	8,627.30		14,378.90
Total-----	995.29	676.90	3,087.46	206,065.56	306,257.70	2.22	517,085.13

The bonded indebtedness of the Territory was \$48,000 and was divided among the different institutions as follows:

Normal school at Edmond-----	\$15,000
Agricultural and Mechanical College at Stillwater-----	15,000
University at Norman-----	18,000
Total-----	48,000

These bonds were issued in 1893 and drew 6 per cent interest, payable at the fiscal agency in the city of New York on the 1st day of July of each year.

On May 7, 1904, these bonds were paid, and are now canceled and in the hands of the Territorial auditor.

Interest computed from July 1, 1903, to May 15, 1904-----	\$2,520
Bonds-----	48,000
Total-----	50,520

There yet remains on hand to the credit of this fund the sum of \$6,119.94.

Interest is not added on above warrants.

The following statement shows the amount of interest credited to the general revenue fund by each bank holding deposits for the year beginning July 1, 1903, and ending June 30, 1904:

Capitol National Bank, Guthrie, Okla.....	\$7, 811. 29
Guthrie National Bank, Guthrie, Okla.....	6, 440. 64
National Bank of Commerce, Guthrie, Okla.....	1, 931. 52
Logan County Bank, Guthrie, Okla.....	1, 784. 85
Guthrie Savings Bank, Guthrie, Okla.....	576. 15
Bank of Indian Territory, Guthrie, Okla.....	85. 71
Total .....	18, 630. 16

The securities furnished by each depository consists wholly of Territorial warrants, county and school district bonds, with the single exception of \$25,000 of a surety bond furnished by the Guthrie National Bank. Each depository pays 3 per cent interest on daily balances.

*Statement showing amount of cash at close of business June 30, 1904, and amount to credit of the several funds named.*

General revenue fund.....	\$31, 405. 74
Northwestern Normal School fund.....	8, 089. 29
Northwestern Normal School lease fund .....	3, 279. 81
Northwestern Normal School fund tax, 1903.....	2, 092. 01
Northwestern Normal School fund tax, 1904.....	. 14
Northwestern Normal School building fund.....	16, 089. 69
Normal School fund .....	10, 024. 50
Normal School fund tax, 1903 .....	1, 243. 10
Normal School fund tax, 1904.....	. 14
Normal School building fund .....	2, 431. 44
Normal School lease fund.....	5, 821. 16
University fund .....	601. 00
University fund tax, 1903 .....	3, 004. 21
University fund tax, 1904 .....	. 16
University building fund.....	4, 654. 23
University insurance indemnity fund .....	8, 169. 08
University equipment fund .....	2, 452. 16
University library building fund .....	3, 368. 18
Colored Agricultural and Normal University fund tax, 1903.....	1, 978. 35
Colored Agricultural and Normal University fund tax, 1904.....	. 06
Colored Agricultural and Normal University fund.....	1, 859. 14
Colored Agricultural and Normal University lease fund.....	2, 588. 08
Colored Agricultural and Normal University building fund.....	6, 651. 53
Common school fund.....	14, 477. 16
Public building fund.....	305, 956. 69
Common school indemnity fund.....	6, 039. 02
University Preparatory School fund.....	198. 52
University Preparatory School tax, 1903.....	1, 144. 44
University Preparatory School tax, 1904.....	. 07
University, Agricultural and Mechanical College and Normal School fund.....	1, 600. 03
Agricultural and Mechanical College levy fund.....	55. 57
Agricultural and Mechanical College levy tax, 1903.....	1, 270. 66
Agricultural and Mechanical College levy tax, 1904.....	. 07
Agricultural and Mechanical College building fund.....	1, 853. 55
Southwestern Normal School fund.....	1, 821. 92
Southwestern Normal School lease fund.....	1, 580. 50
Southwestern Normal School building fund.....	240. 95
Deaf and Dumb School fund.....	12, 356. 21
Deaf and Dumb School fund tax, 1903 .....	7, 396. 01
Deaf and Dumb School fund tax, 1904.....	. 09
Blind School fund .....	7, 212. 98

Board of Education fund.....	\$1,803.58
Condemnation school lands fund.....	19,874.68
Greer County sections 13 fund.....	11,953.39
Greer County sections 33 fund.....	11,230.68
Library fund.....	1,604.44
Bond interest fund.....	6,119.94
Interest land lease fund.....	1,818.53
Statutes and session laws fund.....	117.00
Permanent school fund.....	100.00
Condemnation sections 13 fund.....	1,238.24
Condemnation sections 33 fund.....	2,566.57
Beautifying fund for Southwestern Normal.....	2,066.47

Total.....	539,501.16
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Balance on hand June 1, 1904.....	546,912.21
Amount received from all sources from June 1 to June 30, 1904....	24,853.00

	571,765.21
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Amount paid out from June 1 to June 30, 1904.....	32,264.05
Balance on hand at close of business June 30, 1904.....	539,501.16

	571,765.21
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## FUNDS DEPOSITED.

In Capitol National Bank, Guthrie, Okla.....	244,053.21
Less outstanding checks.....	9.34

	244,043.87
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In Guthrie National Bank, Guthrie, Okla.....	151,306.33
In Bank of Commerce, Guthrie, Okla.....	83,852.13
In Guthrie Savings Bank, Guthrie, Okla.....	28,868.70
In Logan County Bank, Guthrie, Okla.....	31,430.13

Total.....	539,501.16
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[Territorial auditor, L. W. Baxter.]

*Warrants issued by the auditor for the year beginning July 1, 1903, and ending June 30, 1904.*

General revenue fund.....	\$250,481.40
Colored Agricultural and Normal University, land lease.....	\$9,255.37
Colored Agricultural and Normal University, old tax levy.....	2,438.17
Colored Agricultural and Normal University, 1903 tax levy.....	10,000.00
Colored Agricultural and Normal University, building.....	35.00

	21,728.54
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Agricultural and Mechanical College, land lease.....	7,317.98
Agricultural and Mechanical College, old tax levy.....	2,921.29
Agricultural and Mechanical College, 1903 tax levy.....	12,000.00
Agricultural and Mechanical College, building.....	932.47

	23,171.74
--	-----------

Northwestern Normal School, land lease.....	3,820.19
Northwestern Normal School, old tax levy.....	17,702.56
Northwestern Normal School, 1903 tax levy.....	25,335.00

	46,857.75
--	-----------

Southwestern Normal School, beautifying.....	2,781.10
Southwestern Normal School, land lease.....	5,519.50
Southwestern Normal School, building.....	47,581.60
Southwestern Normal School, 1903 tax levy.....	12,900.98

	68,783.18
--	-----------



Central Normal School (Edmond), land lease-----	\$1,278.84	
Central Normal School (Edmond), old tax levy-----	31,735.86	
Central Normal School (Edmond), 1903 tax levy-----	25,359.50	
Central Normal School (Edmond), building-----	31,196.46	
		\$89,570.66
University Preparatory School, old tax levy-----	512.41	
University Preparatory School, land lease-----	7,100.00	
University Preparatory School, 1903 tax levy-----	12,217.90	
		19,830.39
Common school fund-----		223,835.64
Territorial board of education-----		2,046.78
Deaf and Dumb School, old tax levy-----	13,722.71	
Deaf and Dumb School, 1903 tax levy-----	4,854.30	
		18,577.01
Library-----		490.20
Bond interest fund:		
To redeem bonds-----	48,000.00	
Interest on bonds-----	5,407.20	
		53,407.20
Total-----		818,780.49

*Warrants redeemed from July 1, 1903, to June 30, 1904.*

Territorial general revenue-----	\$260,101.00
Agricultural and Mechanical College, old tax-levy fund-----	2,974.85
Agricultural and Mechanical College, 1903 tax-levy fund-----	8,529.60
Colored Agricultural and Normal University, old tax-levy fund---	3,598.19
Colored Agricultural and Normal University, 1903 tax-levy fund---	5,371.84
Northwestern Normal School, old tax-levy fund-----	23,420.01
Northwestern Normal School, 1903 tax-levy fund-----	17,843.47
Colored Agricultural and Normal University land-lease fund-----	9,207.36
Deaf and Dumb School, levy fund-----	18,577.01
University building fund-----	20,128.86
Colored Agricultural and Normal University building fund-----	837.38
Normal School, old tax-levy fund-----	31,739.23
Normal School, 1903 tax-levy fund-----	18,716.88
Agricultural and Mechanical College building fund-----	13,013.92
University Preparatory School, old tax-levy fund-----	9,256.38
University Preparatory School, 1903 tax-levy fund-----	8,655.82
Southwestern Normal School, building fund-----	47,596.45
Common school indemnity fund-----	3,662.86
University, old tax-levy fund-----	22,305.90
University, 1903 tax-levy fund-----	19,046.34
Southwestern Normal School, 1903 tax-levy fund-----	8,379.39
Normal School building fund-----	12,269.03
University equipment fund-----	17,148.46
University Preparatory School, land-lease fund-----	7,100.00
University library building fund-----	7,756.28
Board of education-----	2,046.93
Southwestern Normal School beautifying fund-----	2,781.10
University insurance indemnity-----	27,012.12
Common school fund-----	223,835.64
Northwestern Normal School, building fund-----	26,988.00
Library fund-----	14,403.14
Bond interest-----	53,407.20
Agricultural and Mechanical College land lease-----	7,317.98
College for Agricultural and Mechanical Arts (Morrill fund)-----	25,000.00
Agricultural and Mechanical College bond fund-----	1.73
Normal School land lease-----	1,278.84
Northwestern Normal School land lease-----	3,820.19
Southwestern Normal School land lease-----	5,519.50
Total warrants redeemed-----	990,648.88

*Warrants outstanding on June 30, 1904.*

General revenue fund -----	\$530,375.47
Colored Agricultural and Normal University, old tax-levy fund ---	8.50
Edmond Normal School, old tax-levy fund -----	18.08
Library fund -----	91.40
Colored Agricultural and Normal University, 1903 tax-levy fund --	4,721.51
Northwestern Normal School building -----	76,057.04
Northwestern Normal School, old tax-levy fund -----	5.00
Agricultural and Normal University, old tax-levy fund -----	2.05
Southwestern Normal School, building fund -----	93.54
University Preparatory School, 1903 tax-levy fund -----	3,745.00
Northwestern Normal School, 1903 tax-levy fund -----	7,692.40
Edmond Normal School, 1903 tax-levy fund -----	6,286.99
Southwestern Normal School, 1903 tax-levy fund -----	4,160.64
Agricultural and Mechanical College, 1903 tax levy -----	3,540.13
Edmond Normal School building fund -----	19,139.44
Total -----	655,937.19

## COMPARATIVE STATEMENTS.

Below are given some comparative statements of assessments of farm lands, town lots, telegraph and telephone properties, railroads, live stock, etc., extending over a period of years, which will prove of interest, as it is indicative of the growth of property values during that time:

*Comparative statement of assessments.*

Year.	Total valuation.	Increase.	Decrease.	Year.	Total valuation.	Increase.	Decrease.
1892 -----	\$11,485,162			1899 -----	\$42,982,414	\$6,411,867	
1893 -----	15,258,017	\$3,772,855		1900 -----	49,394,281	11,070,415	
1894 -----	19,948,012	4,689,012		1901 -----	60,464,696	11,126,035	
1895 -----	39,275,139	19,327,127		1902 -----	72,677,423	12,232,727	
1896 -----	24,815,711		\$14,459,428	1903 -----	84,134,472	11,457,049	
1897 -----	32,034,752	2,358,014		1904 -----	90,609,073	6,474,601	
1898 -----	40,623,816	8,589,064					

## FARM LANDS.

Year.	Number of acres reported.	Valuation per acre.	Total valuation.	Year.	Number of acres reported.	Valuation per acre.	Total valuation.
1893 -----	187,081	\$6.61	\$1,236,783	1899 -----	2,340,564	\$3.81	\$8,926,643
1894 -----	286,376	5.47	1,566,687	1900 -----	2,872,705	3.43	10,007,859
1895 -----	683,590	5.89	4,030,817	1901 -----	4,612,708	3.69	17,050,920
1896 -----	1,045,979	3.80	3,983,624	1902 -----	6,344,662	3.56	22,514,395
1897 -----	1,564,979	3.88	6,073,647	1903 -----	7,451,918	3.65	27,204,567
1898 -----	1,886,223	3.80	7,181,095	1904 -----	8,661,945	3.54	30,667,574

## TELEGRAPH AND TELEPHONE.

Year.	Telegraph.	Telephone.	Year.	Telegraph.	Telephone.
1901 -----	\$39,931	\$15,730	1903 -----	\$118,002	\$70,992
1902 -----	82,936	59,256	1904 -----	160,392	153,208

## Comparative statement of assessments—Continued.

## TOWN LOTS.

Year.	Number of lots reported.	Average value per lot.	Total valuation.	Year.	Number of lots reported.	Average value per lot.	Total valuation.
1893 .....	53,850	\$80.73	\$4,347,361	1899 .....	101,183	\$53.58	\$5,421,978
1894 .....	73,758	66.46	4,902,236	1900 .....	114,353	52.44	5,966,004
1895 .....	89,440	80.79	7,225,900	1901 .....	97,792	a 82.44	8,062,566
1896 .....	99,198	50.89	5,048,943	1902 .....	194,399	b 68.55	13,329,198
1897 .....	94,836	55.81	4,797,102	1903 .....	227,325	c 63.33	14,397,329
1898 .....	95,660	54.16	5,235,105	1904 .....	361,834	45.59	16,498,551

a Blaine, Dewey, Kay, Logan, and Payne counties did not report the number of town lots in 1901.

b Dewey, Greer, Kay, and Payne counties did not report the number of town lots for 1902.

c Greer, Kay, Kiowa, Payne, and Washita counties did not report the number of town lots for 1903.

## RAILROADS.

Year.	Assessed valuation.	Increase.	Year.	Assessed valuation.	Increase.
1893 .....	\$1,133,179		1899 .....	\$3,346,189	\$679,026
1894 .....	2,175,489	\$1,042,310	1900 .....	4,016,741	670,552
1895 .....	2,424,065	248,506	1901 .....	4,538,375	526,743
1896 .....	2,553,069	28,974	1902 .....	6,339,462	1,801,087
1897 .....	2,606,093	53,024	1903 .....	7,851,187	1,511,725
1898 .....	2,667,163	61,070	1904 .....	11,109,073	3,258,480

## HORSES.

Year.	Number.	Average value.	Total value.	Year.	Number.	Average value.	Total value.
1893 .....	70,165	\$24.55	\$17,229.25	1899 .....	204,589	\$14.60	\$3,006.87
1894 .....	113,546	20.88	23,754.14	1900 .....	243,303	14.29	34,779.68
1895 .....	151,778	21.05	31,948.82	1901 .....	262,035	17.14	44,865.69
1896 .....	160,886	12.52	20,143.87	1902 .....	280,939	16.38	46,008.36
1897 .....	183,083	13.84	25,340.44	1903 .....	304,713	16.95	51,652.71
1898 .....	203,974	15.84	32,322.33	1904 .....	328,352	15.73	51,656.47

## MULES.

1893 .....	12,281	\$35.16	\$4,318.34	1899 .....	43,769	\$19.21	\$8,411.82
1894 .....	20,407	30.04	6,131.23	1900 .....	49,525	18.32	9,072.92
1895 .....	27,231	28.99	7,895.27	1901 .....	52,581	22.51	10,168.56
1896 .....	32,254	17.19	4,858.65	1902 .....	58,143	21.61	12,567.30
1897 .....	32,101	18.93	6,077.64	1903 .....	63,452	23.05	14,626.40
1898 .....	38,897	21.26	8,265.17	1904 .....	70,048	23.25	16,288.47

## CATTLE.

1893 .....	140,199	\$9.03	\$12,663.63	1899 .....	812,979	\$13.08	\$106,326.34
1894 .....	223,242	8.70	19,429.31	1900 .....	990,534	16.08	159,239.76
1895 .....	376,733	14.74	55,545.97	1901 .....	617,752	12.58	115,587.15
1896 .....	385,365	5.81	22,470.97	1902 .....	959,816	11.05	106,100.95
1897 .....	619,344	12.01	74,392.68	1903 .....	1,036,662	9.62	99,743.56
1898 .....	775,848	14.91	115,700.35	1904 .....	1,057,020	7.20	76,157.24

## HOGS.

1893 .....	44,532	\$3.17	\$1,411.91	1899 .....	220,080	\$1.98	\$4,318.90
1894 .....	75,325	2.37	1,783.62	1900 .....	245,432	2.01	4,950.55
1895 .....	35,132	3.40	4,606.80	1901 .....	277,298	2.46	6,828.26
1896 .....	122,497	1.93	2,356.55	1902 .....	189,218	1.63	3,094.97
1897 .....	203,540	2.44	4,981.42	1903 .....	234,219	2.28	534,438.00
1898 .....	257,740	2.25	5,806.50	1904 .....	287,368	1.81	522,177.00

## SHEEP.

1893 .....	39,312	\$1.17	\$461.74	1899 .....	36,084	\$1.19	\$430.25
1894 .....	35,750	.96	352.45	1900 .....	43,474	1.19	518.88
1895 .....	50,526	1.52	768.24	1901 .....	42,007	1.80	544.19
1896 .....	39,340	.90	354.33	1902 .....	38,308	1.24	473.56
1897 .....	44,563	1.40	615.99	1903 .....	35,231	1.17	413.78
1898 .....	41,702	1.72	717.51	1904 .....	35,735	1.18	424.24



## PUBLIC SCHOOLS.

[L. W. Baxter, Territorial superintendent.]

The Oklahoma public schools have enjoyed another year of prosperity. As the Territory grows older, conditions become more stable, improvements more permanent, salaries increase, and a better equipped body of teachers are employed. The last year has witnessed a great importation of teachers from other States. These teachers are of a superior class, seeking a suitable field for their ability and a place to make a home for themselves.

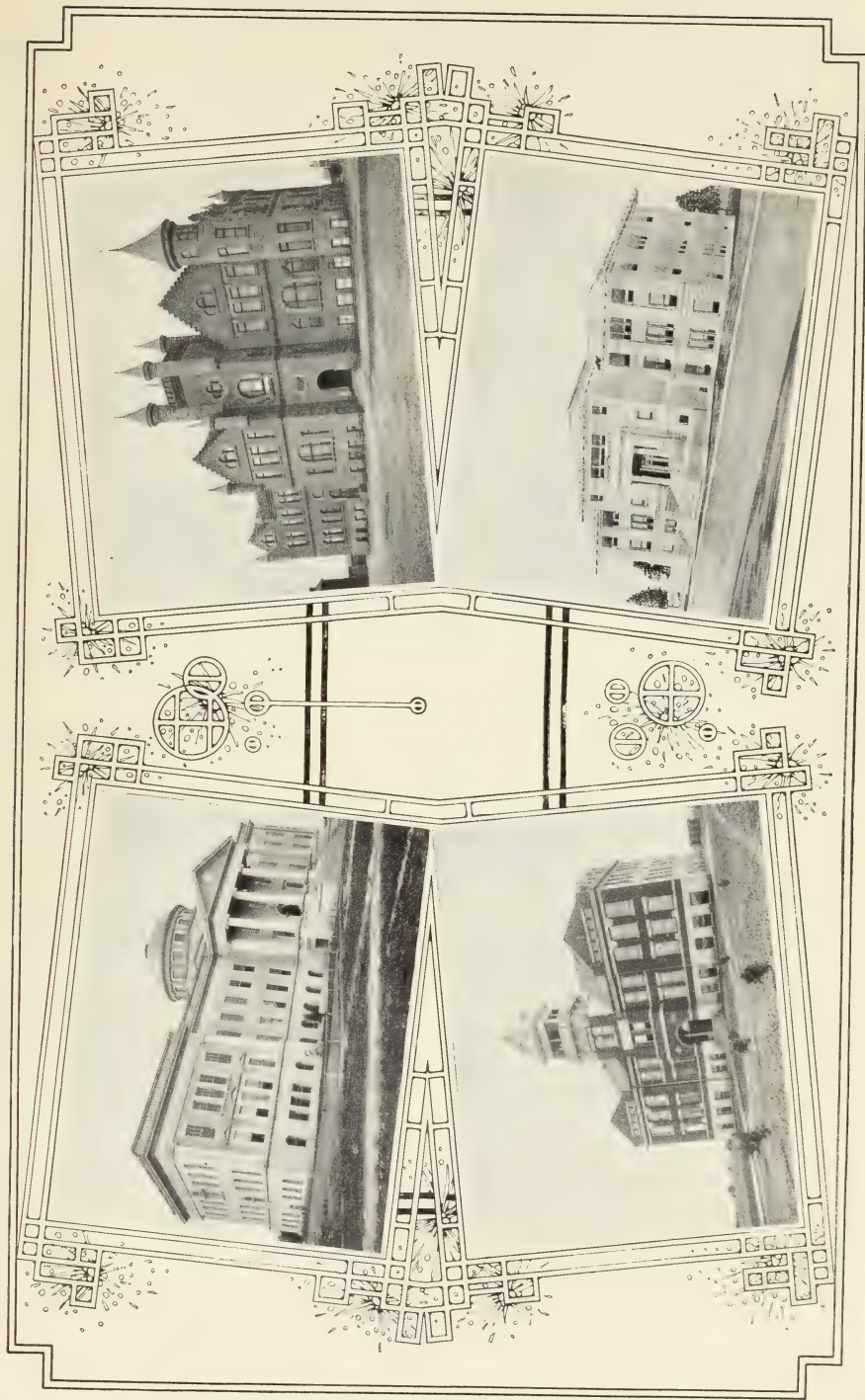
The latest reports from the county superintendents, bearing date of June 30, 1903, show that there are 190,978 children of school age, 6 to 21 years, in the Territory; that 3,438 teachers were employed that year; that there were 2,578 schoolhouses, valued at \$1,617,213.15; that there was received for school purposes \$1,535,744.15; expenditures, \$1,266,278.55, and that 2,500 teachers were certificated. The foregoing statistics are not complete inasmuch as they do not include all of the counties and none of the Territorial institutions. Attached herewith are tables showing comparative school statistics since 1891.

The Oklahoma public school system is thoroughly planned and organized. It may be divided properly into rural schools, city schools, and Territorial institutions. There are about 3,000 country schools in the Territory, 22 cities of the first class, and 7 Territorial institutions. The Territorial board of education consists of the Territorial superintendent, the president of the university, the president of the Central State Normal School, one city superintendent, and one county superintendent, appointed by the governor. This board has the general management and control of the public school system. The supervision of the schools is vested in a Territorial superintendent, appointed by the governor, and a county superintendent for each county, elected biennially. Each city has a superintendent of its own, who is elected by the city board of education. Each school district is immediately controlled by a school board of three members, one of which is elected at the annual meeting in July of each year.

The State institutions are controlled by boards appointed by the governor. They consist of the university at Norman, the Agricultural and Mechanical College at Stillwater, the Central State Normal at Edmond, the Northwestern State Normal at Alva, the Southwestern State Normal at Weatherford, the University Preparatory School at Tonkawa, and the Colored Agricultural and Normal University at Langston.

The course of study is so arranged that the pupil may begin his education in the most distant district school and may graduate at any State institution. The last legislature made provision for the establishment of kindergartens in the cities of the first class. Only one city, Oklahoma City, has taken advantage of this wise provision of the law. The legislature also provided for a kindergarten training school in connection with the various normal schools. The board of education for normal schools is taking active steps to see that the provisions of this law are complied with.

The secondary schools of the Territory consist of the University Preparatory School at Tonkawa, the preparatory school in connection with the university, the Agricultural and Mechanical College at

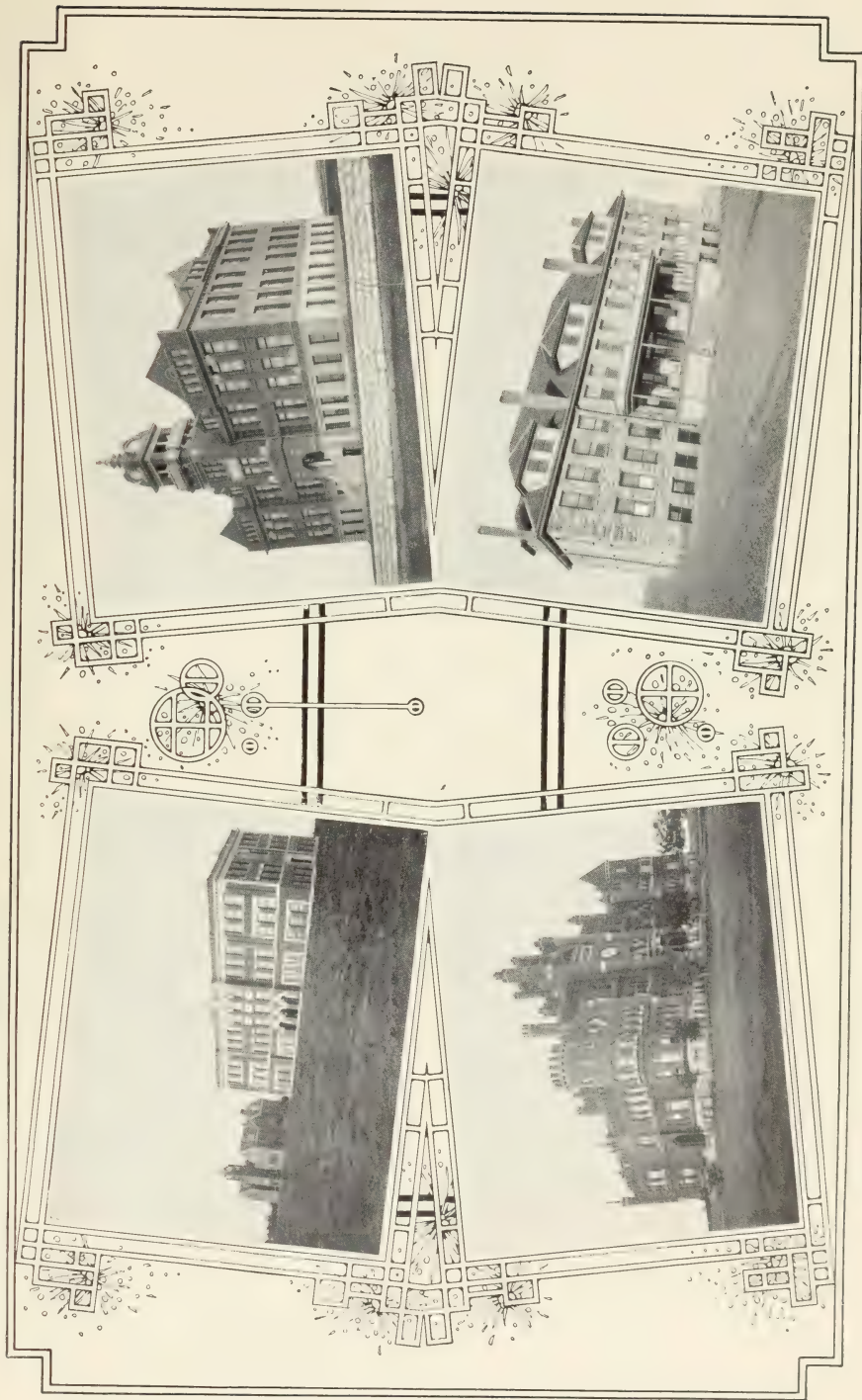


THE UNIVERSITY, NORMAN.  
PREPARATORY SCHOOL, TONKAWA.

AGRICULTURAL AND MECHANICAL COLLEGE, STILLWATER.  
CARNEGIE LIBRARY, NORMAN.



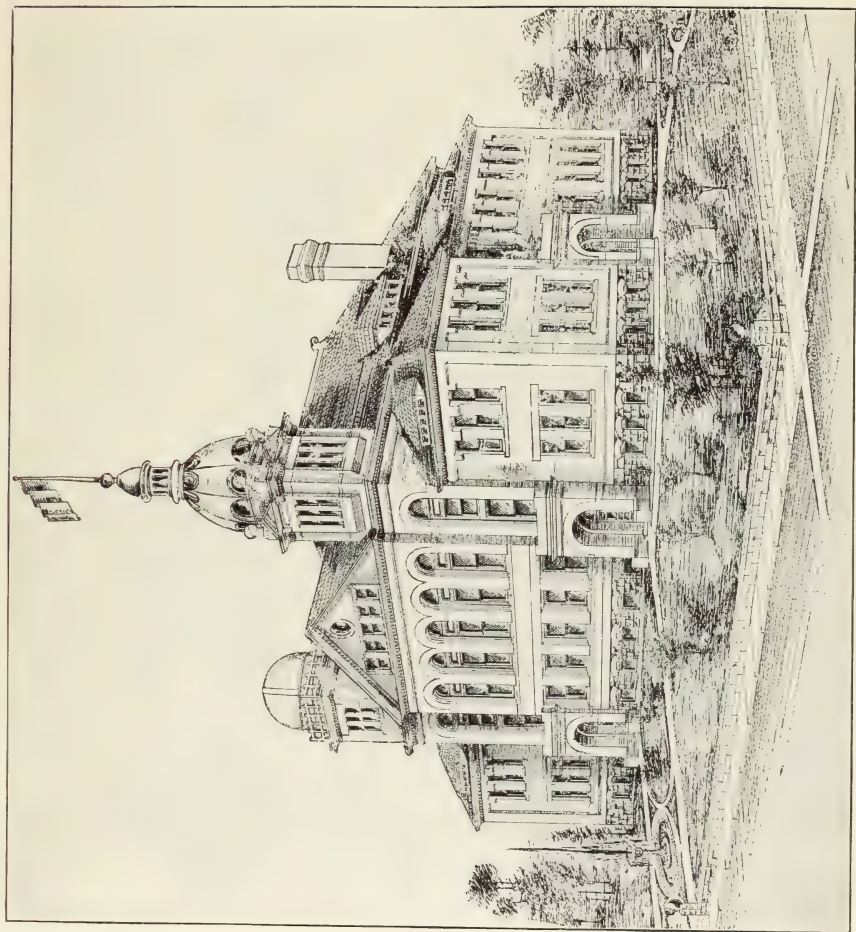




CENTRAL STATE NORMAL, EDMOND.  
NORTHWESTERN NORMAL, ALVA.

SOUTHWESTERN NORMAL, WEATHERFORD.  
AGRICULTURAL AND NORMAL UNIVERSITY, LANGSTON.





FIRST COUNTY HIGH SCHOOL BUILDING IN OKLAHOMA, LOCATED AT GUTHRIE, LOGAN COUNTY.





Stillwater, the normal schools, the Logan County high school, and about 40 high schools in various cities. These schools are quite up to the standard. Most of them offer a four-year course which articulates with eastern universities. The past year has observed a marked development in the number and efficiency of schools offering courses in secondary education.

The Logan County high school is the first county high school established under the new law, and has been a marked success. Its influence has been felt already beyond the confines of Logan County. The course of study is standard, the teachers of a high character, and the discipline excellent. A new building to cost \$35,000 is now being erected.

Besides these there are several important denominational schools. Among others are the Kingfisher College, located at Kingfisher, an institution founded by the general association of Congregational churches of Oklahoma and fostered by the churches of that order throughout the nation; the Oklahoma State Baptist College, located at Blackwell, established by the Oklahoma Baptist State convention, and supported by the Baptists of Oklahoma, Indian Territory, and the States; the Oklahoma Presbyterian Academy at Newkirk, under the management and control of the Presbyterians of the Territory. The Methodists of the two Territories are building and equipping a most excellent institution to be known as the Epworth University, at Oklahoma City. This institution will open its doors the coming school year and will undoubtedly exercise a strong influence in educational centers.

Besides these there are numerous academies, convents, business colleges, etc., under the control of the various denominations and private individuals. These schools all help to build up a strong educational sentiment. The faculties are conservative, conscientious, and capable men and women, devoted not only to the education of our people, but also to their christianization.

The law provides that "Friday following the second Monday of March of each year shall hereafter be known as Arbor Day." Announcing and emphasizing this day, the governor of the Territory issues a proclamation in which he calls upon all of the authorities of the public schools of the Territory to assemble the pupils and conduct proper exercises which shall tend to encourage the planting, protection, and preservation of trees and shrubs, and extend their acquaintance with the best methods to be adopted in the care of the same. The proclamation of the governor is very generally observed, and thousands of trees are planted as a result of his advice and inspiration to beautify and develop the country.

To further encourage the schools, the law provides for the establishment of public school libraries in each school district. There is no penalty attached to the failure of the school board to make the levy for the purchase of books, and yet it is surprising the number of schools that have begun the establishment of libraries, containing interesting, entertaining, and instructive books for the enlightenment of the growing youth of the developing Commonwealth.

The log schoolhouse is almost a curiosity of the past; the white schoolhouse has supplanted it almost everywhere. It is an inspiration to see in each of these temples of learning the beginning of valuable libraries.

In addition to the normal schools, a normal institute is held in each county annually, extending from two to four weeks. The teachers throughout the county assemble at the institute and not only refresh the mind with knowledge of the academic subjects already acquired with new information, but also receive careful pedagogical training. They discuss the very latest and best in educational thought, and go back to their work with an inspiration for the duties which devolve upon them.

There are several classes of teachers' certificates in the Territory. The law provides that after a graduate of the university has taught sixteen months in the schools of Oklahoma, and after proper examination, the Territorial superintendent may indorse his diploma, making it a certificate to teach in the public schools of Oklahoma. The graduates of the normal schools receive diplomas which are five-year certificates to teach in all of the public schools of the Territory, and may be renewed after proper examination by the Territorial superintendent. The Territorial board of education has provided for examination for five-year and ten-year certificates. These examinations are held at the State capitol, usually in the month of July. The law also provides that the county examining board, consisting of the county superintendent and two examiners appointed by the county commissioners, shall hold examinations for teachers in each county on the last Friday and Saturday of April, October, and January, and at the close of the normal institute. This examining committee is authorized to issue three grades of certificates: First grade, good for three years; second grade, good for two years; and third grade, good for one year. Each year the requirements for examinations are a little more rigid, and thus the standard required of teachers a little higher.

The separate school system provides that each county shall establish separate schools, and that these separate schools shall in every way be as efficient as the regular schools. As the separate school law becomes better understood the system becomes more efficient and more satisfactory.

Two or more districts may, by uniting, form a union or graded school for instruction in the higher branches. Not many districts have taken advantage of this provision of the law. Wherever it has been tried, however, it has been eminently successful, and pupils are enabled to receive at home instruction in the high school subjects.

The county superintendent is required to divide the county into a convenient number of districts. These districts are usually 3 miles square. The schoolhouse is placed within one-half mile of the center of the district. This brings within the reach of home of every parent a school. The tendency was, for a long time, to make the districts smaller even than 3 miles square. There is now, however, a strong sentiment in the Territory for the consolidation of school districts and the transportation of pupils. The Territorial board of education has taken active steps toward distributing information concerning the consolidation of school districts, and undoubtedly the coming legislature will be asked to pass a bill to that end.

Oklahoma has every reason to be proud of her public school system. It is such a system as will educate the pupils for the duties and responsibilities of citizenship. The little white schoolhouse is an



emblem of the purity, high thought, industry, and worth of the people.

*Enumeration of persons between the ages of 6 and 21 for the year 1903.*

County.	White.			Colored.			Aggregate.
	Male.	Female.	Total.	Male.	Female.	Total.	
Beaver.....	871	762	1,633				1,633
Blaine.....	2,399	2,269	4,668	273	220	493	5,161
Caddo.....	3,118	3,079	6,197	28	70	98	6,295
Canadian.....	3,027	2,873	5,900	58	69	127	6,027
Cleveland.....	3,435	3,284	6,719	95	100	195	6,914
Comanche.....	4,705	4,714	9,419	50	39	89	9,508
Custer.....	2,895	2,709	5,604	36	38	74	5,678
Day.....	1,222	1,061	2,283	3	2	5	2,288
Dewey.....	2,436	2,284	4,720	28	22	50	4,770
Garfield.....	4,178	4,094	8,272	51	42	93	8,365
Grant.....	3,195	3,074	6,269	7	16	23	6,292
Greer.....	6,087	5,825	11,912				11,912
Kay.....	3,977	3,550	7,527	19	29	48	7,575
Kingfisher.....	2,983	2,892	5,875	443	431	874	6,749
Kiowa.....	2,906	2,928	5,834	5	5	10	5,844
Lincoln.....	5,455	5,131	10,586	472	453	925	11,511
Logan.....	3,430	3,250	6,680	915	962	1,877	8,557
Noble.....	1,744	1,694	3,438	68	61	129	3,567
Oklahoma.....	5,550	5,884	11,434	653	765	1,418	12,852
Pawnee.....	2,534	2,411	4,945	72	60	132	5,077
Payne.....	4,179	3,776	7,955	143	129	272	8,227
Pottawatomie.....	6,382	5,985	12,367	228	251	479	12,846
Roger Mills.....	2,662	2,458	5,120				5,120
Washita.....	3,947	3,594	7,541				7,541
Woods.....	7,911	7,428	15,339	34	24	58	15,397
Woodward.....	4,171	3,796	7,967				7,967
Total.....	95,399	90,805	186,204	3,681	3,788	7,469	193,673

*Enrollment in public schools, 1903.*

County.	White.			Colored.			Aggregate.
	Male.	Female.	Total.	Male.	Female.	Total.	
Beaver.....	512	424	936				936
Blaine.....	1,505	1,375	2,880	130	139	269	3,149
Caddo.....	1,914	1,905	3,819	14	34	48	3,867
Canadian.....	2,450	2,713	5,163	58	69	127	5,290
Cleveland.....	2,861	2,737	5,598	64	52	116	5,714
Comanche.....	2,756	2,604	5,360				5,360
Custer.....	1,134	1,099	2,173	15	17	32	2,205
Day.....	419	359	758				758
Dewey.....	1,724	1,633	3,357	16	13	29	3,386
Garfield.....	2,674	2,524	5,198	15	13	28	5,226
Grant.....	2,757	2,569	5,326	7	16	23	5,349
Greer.....	4,493	4,297	8,790				8,790
Kay.....	2,868	2,970	5,838	16	26	42	5,880
Kingfisher.....	2,490	2,438	4,928	375	350	725	5,653
Kiowa.....	1,359	1,257	2,616				2,616
Lincoln.....	4,314	4,203	8,517	383	391	774	9,291
Logan.....	2,109	1,857	3,966	499	500	999	4,965
Noble.....	1,572	1,488	3,060	56	45	101	3,161
Oklahoma.....	3,859	3,692	7,551	447	495	942	8,493
Pawnee.....	1,701	1,580	3,281	29	22	51	3,332
Payne.....	3,356	4,531	7,887	126	114	240	8,127
Pottawatomie.....	4,277	4,138	8,415	143	175	318	8,733
Roger Mills.....	1,875	1,735	3,610				3,610
Washita.....	2,466	2,920	5,386				5,386
Woods.....	5,946	5,456	11,402	14	19	33	11,435
Woodward.....	2,820	2,627	5,447				5,447
Total.....	66,211	65,051	131,262	2,407	2,490	4,897	136,159

*Graduates from common schools in Oklahoma.*

County.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.	1904.	Total.
Beaver .....	5				1			9	2	17
Blaine .....			6	10	14	9	32	36		107
Caddo .....							4	58	36	98
Canadian .....			3		7	6	1	18	48	83
Cleveland .....	27	10	17	12	35	4	39	62	90	236
Comanche .....						1	3	33	33	70
Custer .....			2		4	12	1	15	23	57
Day .....						1				1
Dewey .....				9			10	20	30	71
Garfield .....				9		12	25	57		103
Grant .....			13		19	45	34	65	64	240
Greer .....			5	17	26	5	10	25	32	120
Kay .....	46	6	12	42	26	53	41	82	64	372
Kingfisher .....	27	14	3		13	23	42	74	37	233
Kiowa .....					50		9	2	18	79
Lincoln .....				7		5	50	96	138	206
Logan .....	8	27	43		3	18	138	187	70	494
Noble .....	8	16		10	11	10	16	12	36	119
Oklahoma .....		25		10	20	20	30	44		149
Pawnee .....				28	10	25	7	34	2	106
Payne .....	6		5	11	23	25	22	45	28	165
Pottawatomie .....		4		9	13	4	16	23	35	104
Roger Mills .....				2	33	6	18	36	28	123
Washita .....		2		9	12	4	7	36	44	114
Woods .....			34	8	17	10	12	69	101	251
Woodward .....				6	6	4	20	25	42	103
Total .....	127	104	143	199	343	303	588	1,163	941	3,911

*Schools taught during the fiscal year ending June 30, 1903.*

County.	Organized districts.	Districts in which schools were taught.	Schools taught.	Days schools were taught.	Average length of schools in days.
Beaver .....	63	47	52	4,690	90
Blaine .....	98	89	89	8,320	93
Caddo .....	155	105	108	8,640	80
Canadian .....	97	97	115	11,910	103
Cleveland .....	68	67	73	8,420	113
Comanche .....	192	186	212	14,170	66
Custer .....	112	62	65		
Day .....	57	29	29	2,050	72
Dewey .....	92	88	88	8,320	94
Garfield .....	122	122	126		
Grant .....	124	124	124	15,512	125
Greer .....	139	125	125	11,330	90
Kay .....	89	88			
Kingfisher .....	116	116	127	14,640	110
Kiowa .....	106	86	86	7,220	83
Lincoln .....	135	132	160		
Logan .....	97	95	167	11,950	71
Noble .....	60	57	198	7,540	32
Oklahoma .....	87	87	200	11,390	56
Pawnee .....	80	80	80	10,140	120
Payne .....	102	93	100	13,500	135
Pottawatomie .....	118	112	136	11,160	82
Roger Mills .....	78	64	64	5,600	89
Washita .....	103	97	101		
Woods .....	280	271	287	30,920	
Woodward .....	224	170	178	15,410	85
Total .....	2,991	2,688	3,090	221,672	89

*Schoolhouses for the year ending June 30, 1903.*

County.	Number of school-houses.	Value.	Number erected during year.	Cost.	Total valuation of all other property belonging to district.
Beaver .....	48	\$8,962.50	3	\$925.00	\$610.00
Blaine .....	89	37,392.83	13	18,690.39	7,657.79
Caddo .....	66	37,822.54	115	44,010.00	10,449.00
Canadian .....	95	63,586.90	14	10,420.40	20,455.10
Cleveland .....	75	43,090.00	5	1,900.00	(a)
Comanche .....	181	137,382.64	6	4,800.00	(a)
Custer .....	65	14,369.00	3	1,470.00	729.00
Day .....	23	6,523.47	8	2,643.45	1,582.15
Dewey .....	85	31,400.00	15	7,675.00	13,574.16
Garfield .....	129	44,180.42	11	8,151.32	6,214.00
Grant .....	128	32,848.00	6	5,115.00	3,784.00
Greer .....	122	71,717.00	9	14,400.00	20,698.00
Kay .....	94	71,915.00	3	14,400.00	19,358.00
Kingfisher .....	128	74,147.75	4	3,975.75	40,014.60
Kiowa .....	(a)	(a)	11	9,678.41	(a)
Lincoln .....	159	95,595.00	17	21,386.00	20,624.00
Logan .....	117	135,326.83	10	10,864.34	138,988.74
Noble .....	60	40,767.57	2	1,357.57	10,020.00
Oklahoma .....	119	313,671.00	9	129,245.00	58,890.00
Pawnee .....	(a)	(a)	(a)	(a)	(a)
Payne .....	109	62,245.00	9	7,203.49	16,498.00
Pottawatomie .....	122	52,780.00	3	15,000.00	8,135.00
Roger Mills .....	66	27,050.00	25	10,000.00	12,000.00
Washita .....	101	44,316.00	11	17,450.00	(a)
Woods .....	262	122,340.00	30	28,343.00	(a)
Woodward .....	135	47,784.00	39	9,952.00	18,246.00
Total .....	2,578	1,617,213.45	381	455,761.12	768,526.54

a Not reported.

*Average daily attendance for the year ending June 30, 1903.*

County.	Male.	Female.	Total.
Beaver .....	366	299	665
Blaine .....	873	769	1,642
Caddo .....	1,691	1,730	3,421
Canadian .....	1,600	1,630	3,230
Cleveland .....	1,661	1,692	3,353
Comanche .....	1,524	1,541	3,065
Dewey .....	1,258	1,308	2,566
Garfield .....	1,713	1,707	3,420
Grant .....	1,954	1,873	3,827
Greer .....	2,709	2,683	5,392
Kay .....	2,156	2,122	4,278
Kingfisher .....	1,965	1,863	3,828
Kiowa .....	738	738	1,476
Lincoln .....	2,377	2,601	4,978
Logan .....	1,412	1,425	2,837
Noble .....	1,167	1,118	2,285
Oklahoma .....	2,654	2,735	5,389
Pawnee .....	1,730	1,602	3,332
Payne .....	1,841	1,911	3,752
Pottawatomie .....	2,677	2,800	5,477
Roger Mills .....	1,192	1,068	2,260
Washita .....	1,534	1,489	3,023
Woods .....	4,086	3,813	7,899
Woodward .....	1,769	1,741	3,510
Total .....	42,647	42,258	84,905



*Teachers' certificates issued during the year ending June 30, 1903.*

County.	First grade.	Second grade.	Third grade.	Total.
Beaver .....	9	12	14	35
Blaine .....	7	33	63	103
Caddo .....	10	50	37	97
Canadian .....	4	42	44	90
Cleveland .....	8	32	22	62
Comanche .....	6	42	52	100
Day .....		7	4	11
Dewey .....	10	40	37	87
Garfield .....	14	46	73	133
Grant .....	25	87	90	192
Greer .....	18	59	34	111
Kay .....	10	36	44	90
Kingfisher .....	4	78	95	177
Kiowa .....	12	60	48	120
Lincoln .....	12	59	83	154
Logan .....	13	58	73	144
Noble .....	6	35	21	62
Oklahoma .....	13	42	58	113
Payne .....	3	48	63	104
Pottawatomie .....	12	46	37	95
Roger Mills .....	6	17	15	38
Woods .....	21	115	82	269
Woodward .....	8	65	80	153
Total .....	231	1,109	1,169	2,540

*Teachers employed and the average salaries paid for the year ending June 30, 1903.*

County.	Male.	Fe-male.	Total.	Average salary paid.						Total amount paid to teachers
				First grade.		Second grade.		Third grade.		
				Male.	Fe-male.	Male.	Fe-male.	Male.	Fe-male.	
Beaver .....	13	35	48	\$37.00	\$36.00	\$32.00	\$30.00	\$29.00	\$30.00	\$5,354.97
Blaine .....	40	63	103	49.00	36.00	40.00	33.00	31.00	30.00	17,477.06
Caddo .....	39	74	116	43.00	40.00	45.00		55.00		19,838.00
Canadian .....	34	96	126	48.00	45.00	42.00	40.00	40.00	33.00	33,520.37
Cleveland .....	51	54	105	53.00	35.00	40.00	38.00	37.00	31.00	29,671.02
Comanche .....	64	148	212	40.00	49.00	37.00	35.00	35.00	32.00	27,281.75
Custer .....	35	35	70	46.00	38.00	41.00	30.00	30.00	29.00	10,634.37
Day .....	17	13	30	36.00		35.00	33.00	27.00	27.00	3,249.26
Dewey .....	31	59	90	44.00	41.00	33.00	34.00	28.00	30.00	14,727.46
Garfield .....	62	182	244	47.00	43.00	38.00	38.00	33.00	32.00	31,156.56
Grant .....	61	79	140	51.00	48.00	39.00	37.00	37.00	32.00	42,536.41
Greer .....	84	83	167	57.00	45.00	47.00	41.00	37.00	35.00	45,215.75
Kay .....	48	50	98	54.00	50.00	46.00	44.00	39.00	39.00	
Kingfisher .....	70	96	166	62.00	46.00	54.00	39.00	36.00	34.00	66,070.06
Kiowa .....	38	66	104	65.00	50.00	38.00	33.00	37.00	34.00	24,065.16
Lincoln .....	75	97	192	49.00	46.00	41.00	38.00	34.00	33.00	37,940.78
Logan .....	39	84	167	44.00	38.00	38.00	37.00	34.00	32.00	38,562.96
Noble .....	23	54	75	47.00	32.00	38.00	37.00	40.00	32.00	20,936.65
Oklahoma .....	62	139	201	55.00	48.00	38.00	40.00	36.00	33.00	85,994.61
Pawnee .....	36	56	92	52.00	41.00	40.00	37.00	34.00	33.00	22,529.63
Payne .....	59	81	140	55.00	48.00	42.00	37.00	38.00	36.00	35,886.10
Pottawatomie .....	92	61	153	51.00	49.00	47.00	45.00	38.00	37.00	33,391.92
Roger Mills .....	33	44	77	46.00	40.60	35.00	31.00	33.00	30.00	13,996.00
Washita .....	64	48	112	57.00	40.00	47.00	37.00	30.00	26.00	22,970.00
Woods .....	115	172	287	49.00	46.00	38.00	35.00	36.00	32.00	68,486.08
Woodward .....	67	121	188	48.00	36.00	37.00	35.00	31.00	31.00	31,636.00
Total .....	1,352	2,090	3,432	48.00	42.00	40.00	36.00	33.00	30.00	704,126.31

(c)  
a Not returned.

*Receipts for the year ending June 30, 1903.*

County.	Balance on hand June 30, 1902.	From Territorial apportionment.	From county apportionment.	From district tax.	From sale of bonds.	From other sources.	Total receipts.
Beaver.....	\$1,321.52	\$1,732.97	\$1,156.85	\$3,754.33	\$1,000.00	\$435.75	\$9,401.42
Blaine.....	1,577.16	6,494.13	335.83	19,635.59	9,238.34	1,012.84	38,293.89
Caddo.....	116.89	4,477.53	1,405.73		3,712.00		9,712.15
Canadian.....	12,982.53	10,484.79	3,705.71	40,094.12	1,833.68	4,065.30	73,166.13
Cleveland.....	8,785.62	12,650.96	7,491.86	24,708.61	500.00	702.22	54,839.27
Comanche.....		7,759.34	4,537.80	7,083.23			19,380.37
Custer.....	3,776.50	8,362.85		25,935.68		31.23	38,106.26
Day.....	370.51	2,578.59	440.64	4,080.38	2,653.75	34.83	10,158.70
Dewey.....	1,831.24	6,814.82	240.00	13,045.68	5,513.23	1,442.26	20,887.23
Garfield.....	7,691.43	14,170.69	4,485.22	57,929.52			84,276.86
Grant.....	8,213.84	11,519.18	3,458.52	64,625.18	4,150.32	738.54	92,705.58
Greer.....	5,114.87	18,767.26	5,765.37	35,419.70	21,311.20	325.90	87,004.39
Kay.....		7,710.18	5,215.59				12,955.77
Kingfisher.....	10,201.00	12,886.13	847.25	49,045.63	6,454.25	1,986.89	81,421.15
Kiowa.....		14,044.56	2,439.33	20,518.25	17,437.84	285.59	54,725.57
Lincoln.....	8,687.39	18,519.68	1,776.47	38,835.11	17,084.02	2,525.60	87,428.27
Logan.....	15,610.07	15,959.67	861.36	46,375.25	2,900.00	836.70	82,543.05
Noble.....	5,178.09	6,776.38	2,947.73	24,212.27	1,555.00	162.12	40,831.59
Oklahoma.....	26,862.73	18,538.24	3,478.20	85,208.17	76,179.37	6,482.14	216,748.85
Pawnee.....	5,954.04	8,060.29	878.50	22,932.71	700.00	3,126.93	41,642.47
Payne.....	5,684.47	15,308.21	1,987.80	34,065.90	3,186.25	901.31	61,133.94
Pottawatomie.....		16,386.90	918.06	33,776.20	547.00	1,965.30	53,593.46
Roger Mills.....	4,241.26	4,189.85	489.80	13,921.21			22,842.12
Washita.....		8,053.44					8,053.44
Woods.....	16,585.95	25,749.69	4,206.63	86,596.04	28,883.00		162,021.31
Woodward.....	8,474.27	10,266.60	11,585.00	24,729.48	8,434.00	381.56	63,870.91
Total.....	159,561.38	288,252.93	70,685.25	776,528.24	213,273.25	27,443.10	1,535,744.15

*Expenditures for the year ending June 30, 1903.*

County.	Teachers' salaries.	Sites, buildings, and grounds.	Rents, repairs, and incidentals.	Library and apparatus.	Other purposes.	Total expenditures.
Beaver.....	\$5,354.97	\$1,848.84	\$925.51	\$26.75	\$463.37	\$8,619.44
Blaine.....	17,477.06	11,250.82	3,015.83	480.81	1,554.22	33,778.74
Caddo.....	19,838.76	50,867.89	1,958.64	54.92		72,720.21
Canadian.....	33,520.37	9,051.17	6,580.08	333.50	2,640.86	52,125.98
Cleveland.....	29,671.02	1,799.72	5,141.82	377.88	4,202.49	41,192.93
Comanche.....	27,281.95		3,542.69	141.10	493.94	31,459.68
Custer.....	10,634.37	5,750.70	2,454.95	85.20	577.37	19,502.59
Day.....	3,249.26	2,183.20	298.76	21.80		5,752.02
Dewey.....	14,727.46	8,047.12	1,834.52	1,157.84	853.72	26,620.66
Garfield.....	31,156.56					31,156.56
Grant.....	42,536.41	6,159.97	13,666.03	270.75	3,760.83	66,393.99
Greer.....	39,091.65	28,782.52	8,747.60	492.40	2,259.61	79,373.78
Kay.....						
Kingfisher.....	43,989.20	11,363.16	10,447.05	711.65	1,594.35	68,105.41
Kiowa.....	24,065.16	17,869.54	2,772.73	1,163.17	3,148.84	49,019.44
Lincoln.....	37,940.78	20,508.45	4,824.20	207.43	13,942.41	77,423.27
Logan.....	38,562.96	5,772.89	11,629.60	343.87	339.43	59,648.75
Noble.....	20,936.65	2,982.34	4,838.10	389.15	4,008.98	33,245.14
Oklahoma.....	85,994.61	79,277.38	9,339.64	423.48	4,200.80	179,235.91
Pawnee.....	23,529.63					23,529.63
Payne.....	35,886.10	7,541.49	6,783.29	1,683.25	3,728.51	55,622.64
Pottawatomie.....	33,391.92	5,841.28	6,801.23	896.42	2,531.95	49,462.80
Washita.....	22,970.00					22,970.00
Woods.....	68,486.08	20,747.32		233.72	40,742.40	130,206.53
Woodward.....	31,636.52	11,577.38	5,337.91	303.07	1,253.57	50,108.45
Total.....	740,929.45	309,223.19	110,940.18	9,798.16	95,387.57	1,266,278.55

*Comparative statistical table, 1891-1904.*

Year.	Enumeration.	Number of teachers.	Number of school-houses.	Value of school-houses.	Total receipts.	Total expenditures.	Teachers' certificates issued.	Graduates from common schools.
1891	21,335	483	109	\$12,085.55	\$44,664.21	\$56,689.11	751	-----
1892	32,716	412	222	53,195.55	54,195.14	33,867.56	486	-----
1893	47,809	-----	-----	199,220.55	-----	-----	-----	-----
1894	71,430	827	622	-----	152,178.20	202,157.58	581	-----
1895	57,674	1,655	718	370,272.02	309,451.88	284,285.07	1,422	-----
1896	63,686	1,733	1,180	371,460.17	414,534.55	365,288.33	1,703	129
1897	68,748	2,001	-----	-----	377,969.40	358,394.77	1,321	104
1898	77,121	2,107	1,715	-----	540,238.16	415,347.23	1,236	143
1899	82,224	2,217	1,930	678,852.21	592,932.75	559,749.27	1,277	199
1900	99,602	2,343	1,994	760,972.61	929,441.81	686,095.32	1,453	343
1901	145,843	2,503	2,192	1,056,608.01	1,018,361.30	787,096.49	2,564	303
1902	177,825	2,915	2,578	1,347,257.15	1,207,395.62	1,116,230.77	2,754	588
1903	193,673	3,438	-----	1,617,213.15	1,535,744.15	1,266,278.55	2,540	1,163

## SCHOOL FUND APPORTIONMENT.

For the fiscal year ending June 30, 1904, there was apportioned among the common schools the sum of \$220,177.85, being an increase of \$38,348.97 over last year.

The scholastic population has also increased 12,495 over the former enumeration. The total appropriation per capita was \$1.15.

*Apportionment for January, 1904.*

Scholastic population	191,459
Amount apportioned	\$206,775.72
Apportionment per capita	\$1.08
Balance in treasury	\$1,305.15

County.	Scholastic population.	Amount.	County.	Scholastic population.	Amount.
Beaver	1,633	\$1,763.64	Kiowa	5,844	\$6,311.52
Blaine	5,161	5,573.88	Lincoln	11,511	12,431.88
Caddo	6,214	6,711.12	Logan	8,538	9,221.04
Canadian	6,027	6,509.16	Noble	3,567	3,852.36
Cleveland	6,914	7,467.12	Oklahoma	12,081	13,047.48
Comanche	9,508	10,268.64	Pawnee	3,994	4,313.52
Custer	5,644	6,095.52	Payne	8,227	8,885.16
Day	2,288	2,471.04	Pottawatomie	12,681	13,695.48
Dewey	4,770	5,151.60	Roger Mills	5,120	5,529.60
Garfield	8,304	8,968.32	Washita	7,541	8,144.28
Grant	6,232	6,795.36	Woods	15,397	16,628.76
Greer	11,912	12,864.96	Woodward	7,967	8,604.36
Kay	7,575	8,181.00			
Kingfisher	6,749	7,288.92	Total	191,459	206,775.72

*Apportionment for July, 1904.*

Scholastic population	191,459
Amount apportioned	\$13,402.13
Apportionment per capita	\$0.07
Balance in treasury	\$1,075.03

County.	Scholastic population.	Amount.	County.	Scholastic population.	Amount.
Beaver	1,633	\$114.31	Kiowa	5,844	\$409.08
Blaine	5,161	361.27	Lincoln	11,511	805.77
Caddo	6,214	434.98	Logan	8,538	597.66
Canadian	6,027	421.89	Noble	3,567	249.69
Cleveland	6,914	483.98	Oklahoma	12,081	845.67
Comanche	9,508	665.56	Pawnee	3,994	279.58
Custer	5,644	395.08	Payne	8,227	575.89
Day	2,288	160.16	Pottawatomie	12,681	887.67
Dewey	4,770	333.90	Roger Mills	5,120	358.40
Garfield	8,304	581.28	Washita	7,541	527.87
Grant	6,232	440.44	Woods	15,397	1,077.79
Greer	11,912	833.84	Woodward	7,967	557.69
Kay	7,575	530.25			
Kingfisher	6,749	472.43	Total	191,459	13,402.13



*Territorial apportionments, 1892-1904.*

Year.	Amount.	Year.	Amount.
1892	\$21,662.60	1898	\$121,382.90
1893	20,416.86	1899	98,429.72
1894	45,858.48	1900	129,652.81
1895	54,665.65	1901	150,201.92
1896	53,591.43	1902	267,552.56
1897	76,286.30	1903	217,192.16

## THE UNIVERSITY OF OKLAHOMA.

[D. R. Boyd, president.]

The university is founded upon the authority of an act of the legislature of the Territory of Oklahoma entitled "An act to locate and establish the University of Oklahoma." The act provided that when \$10,000 and 40 acres of land should be given to the Territory by the city of Norman the school should be located at that place. These requirements having been met, the university was established at Norman in 1892.

The law then proceeds to state more explicitly the scope and purposes of the school, as follows:

(6787) SEC. 9. The object of the University of Oklahoma shall be to provide the means of acquiring a thorough knowledge of the various branches of learning connected with scientific, industrial, and professional pursuits, in the instruction and training of persons in the theory and art of teaching, and also the fundamental laws of the United States and this Territory in what regards the rights and duties of citizens.

(6788) SEC. 10. The college department of arts shall embrace courses of instruction in mathematical, physical, and natural sciences, with their application to the industrial arts, such as agriculture, mechanics, engineering, mining and metallurgy, manufactures, architecture, and commerce, and such branches included in the college of letters as shall be necessary to proper fitness of pupils in the scientific and practical courses of their chosen pursuits and in military tactics; and in the normal department the proper instruction and learning in the theory and art of teaching in the common schools; and as soon as the income of the university will allow, in such order as the wants of the public shall seem to require, the said courses in the sciences and their application to the practical arts shall be expanded into distinct colleges of arts, and shall embrace a liberal course of instruction in language, literature, and philosophy, together with such courses or parts of courses in the college of arts as the regents of the university shall prescribe.

(6789) SEC. 11. The university shall be open to female as well as to male students, under such regulations and restrictions as the board of regents may deem proper, and all able-bodied male students of the university in whatever college may receive instruction and discipline in military tactics, the requisite arms for which shall be furnished by the Territory.

*Support.*—The university is supported out of the general revenues of the Territory. In addition to this, section 13 in each township in what is known as the Cherokee Outlet and in the Kiowa, Comanche, and Wichita country opened to settlement in 1901, has been reserved for university, normal school, and agricultural college purposes. The lands so reserved are now leased for the benefit of the schools named.

*Situation.*—Norman, the seat of the university, is the county seat of Cleveland County. It is an excellent town of 3,500 inhabitants, situated 18 miles south of Oklahoma City on the Atchison, Topeka and Santa Fe Railroad. It stands on ground sloping to the Canadian River and is preeminently healthful. The winters are mild and the

atmosphere dry and bracing. The citizens of Norman are from all parts of the United States and are united in their hearty sympathy with educational matters.

*Grounds.*—The university campus, comprising 60 acres, lies at a slight elevation overlooking the surrounding country, 1 mile south of the business portion of the town. The grounds have been divided into six quadrangular plots, with drives. Four of these quadrangles will be given over to the buildings, one to athletics, and one is unassigned at present. In each square the buildings will be grouped eventually around an open court.

Eleven years ago the boulevard was set out in elm trees. From the first they made remarkable growth and are now of a size to make the drive one of the most attractive in Oklahoma. Since then other large plantings have been made, for the most part elm and ash trees. During the present season it is proposed to continue the work by planting 5,000 elm, pecan, persimmon, cedar, and other trees, together with shrubs and hedges. It is the desire of the university management to make the grounds as attractive as possible in themselves, as well as a fit setting for the buildings.

*Buildings.*—University Hall, erected 1902–3 under a Territorial appropriation of \$90,000, contains the offices of the president, secretary, registrar, and agents, with suites of recitation rooms, offices, society halls, etc. It is built of buff brick with terra-cotta trimmings, and basement of planed limestone, in the Renaissance style of architecture. The west wing as planned was not built under the above appropriation. Formal entrance into this building took place March 15, 1903.

Science Hall: The old Science Hall, with all its contents, was burned on the night of January 6, 1903. This was the first building on the campus and was completed in 1893. Among the contents destroyed were university and private scientific collections, an excellent library of 12,000 volumes, fixtures, furniture, physical and chemical apparatus, etc. Building and contents were valued at \$70,000; insurance, \$35,000. Pending the completion of the new Science Hall, construction of which was begun in August, 1903, the departments of science are provided for in temporary buildings on the campus. Books, apparatus, furniture, and collections are being rapidly replaced.

The new Science Hall is a gray pressed-brick structure, 63 by 125 feet, with limestone trimmings and of the Romanesque style of architecture. More particular descriptions of it will be found under the descriptions of the laboratories of chemistry, biology, and geology.

Formal occupation of this building will take place in September, 1904.

The library building, which is to cost \$30,000, is the gift of Mr. Andrew Carnegie. It has two stories and a basement and is built of limestone and gray brick, after the Doric order of architecture. The reading room and offices are on the first floor, seminary rooms on the second, and for the present the women's gymnasium in the basement. The construction is well under way and the building will be ready for occupancy by the beginning of the 1904–5 school year.

**Gymnasium:** The university management has recognized physical culture as an essential part of the work of the university. In the summer of 1903 a new gymnasium, 55 by 100 feet, was built. This is divided into six rooms. The main hall, 20 feet high, has 3,200 square feet of unobstructed floor space. The locker room accommodates 500 individual lockers. The bathroom adjacent is fitted with spray and shower baths and supplied with hot and cold water. The director's office and an individual exercising room occupy the east end.

The building is equipped throughout with all the essentials of a first-class gymnasium.

The women's gymnasium occupies the entire basement of the new Carnegie library. The main room, 12 feet high, contains 4,000 square feet of floor space. The east wing, 30 by 40 feet, is used as a locker and bath room. The locker room is provided with 4 dressing rooms, each containing 20 lockers. The dressing rooms connect with 12 individual shower and spray baths supplied with hot and cold water.

**Workshops:** The building, 48 by 86 feet, soon to be vacated, but now temporarily occupied by the departments of chemistry, biology, and geology, will be fitted up with equipment for work in engineering.

**Anatomical laboratory:** This building, consisting of a large dissecting room, a class room and library, and a store and preparation room, lies west of the workshops. It was especially constructed for work in human anatomy.

A smaller building adjacent to the anatomical laboratory is used for taxidermy and as a general preparation shop for museum material.

**Heating plant:** All buildings are heated by steam from a central heating plant and all are completely wired and supplied with electric lights.

*Organization.*—The university organization consists of the following schools: (1) College of arts and sciences, (2) school of medicine, (3) school of mines, (4) school of fine arts, (5) school of pharmacy, (6) preparatory school.

The college of arts and sciences embraces: (*a*) An undergraduate course, chiefly elective; (*b*) a combined course in collegiate and medical studies; (*c*) combined courses in collegiate and engineering studies. All leading to the bachelor degrees.

The school of medicine covers the first two years' work of a regular four-year course in medicine, and prepares the student to enter the third-year class in another medical college.

The school of mines covers four years' work and leads to the degree of bachelor of science in mining.

The school of fine arts embraces: (*a*) A preparatory course in music, elocution, oratory, and art; (*b*) an advanced course in music, elocution, oratory, and art; (*c*) a post-graduate course in piano, voice, and violin.

The school of pharmacy covers two years' work and leads to the degree of pharmaceutical chemist.

The preparatory school covers a three years' course, leading to the college of arts and sciences.



*Enrollment.*—The following is a summary of the enrollment for the year 1903-4 as shown by the catalogue for 1904-5:

College of arts and sciences:	
Graduate students .....	2
Seniors .....	10
Juniors .....	14
Sophomores .....	25
Freshmen .....	41
Special .....	36
	<hr/> 128
School of medicine:	
Second year .....	3
First year .....	2
	<hr/> 5
School of mines:	
Second year .....	2
First year .....	2
	<hr/> 4
School of fine arts:	
Seniors .....	2
Juniors .....	2
Sophomores .....	4
Freshmen .....	18
Specials .....	51
	<hr/> 77
School of pharmacy:	
Second year .....	3
First year .....	22
	<hr/> 25
Preparatory school:	
Third year .....	44
Second year .....	69
First year .....	105
	<hr/> 218
Business course .....	32
	<hr/>
Total .....	489
Repetitions .....	22
	<hr/>
Total enrollment to May 15, 1904 .....	467

#### THE CENTRAL STATE NORMAL SCHOOL.

[F. H. Umholtz, president.]

The Normal School of Oklahoma was located and established at Edmond by legislative enactment in 1890, upon the conditions, which were promptly met, that Oklahoma County donate \$5,000 in bonds, and that the town of Edmond donate 40 acres of land for a school site. Two thousand dollars additional in bonds was donated by the town.

Edmond is a thriving city of more than 2,500 inhabitants, situated about midway between Guthrie and Oklahoma City on the highest point of the Santa Fe Railway, and preeminently distinguished for its healthfulness and for the beauty of its surroundings. It is distinctively a college town, its citizens having established homes here largely because the town is free from any of the vices commonly prevalent in county-seat towns.

The original structure of the normal school, built of brick, was completed in 1893; the wings, built of stone, were erected in 1894 and 1895. The entire building contains seventeen class rooms, gymnasium, two bathrooms, and a large room for manual training.

On account of the large increase in the number of students in the two years just past six buildings in the vicinity of the main building have been occupied for school purposes. Two of these were occupied by the department of music, one by the department of biology, two by the training school, and one by the regular classes of the normal school.

To relieve the crowded condition and to increase the facilities for instruction, the legislative assembly of 1903 made an appropriation of \$40,000 for the erection of an additional building. The plans of the new building are in accord with the highest attainments possible in modern educational facilities. The structure, built of pressed brick and stone, is three stories high, and contains the following rooms: An assembly hall of 800 seating capacity, two cloakrooms (with toilet) adjacent to assembly hall, two laboratories, reception hall, president's office, regents' room, library, reading room, and thirteen recitation rooms. This constitutes the main building, and is especially adapted to normal school purposes. The building is now ready for use.

A central heating building has been erected the past year by which both the other buildings are heated throughout with steam. This building is located about 200 feet away from either building, thus removing all danger from fire or explosion. This steam plant also furnishes water for the lavatories, toilet rooms, and baths of the other buildings.

The special function of the normal school is to prepare young men and young women for the work of teaching. Fundamentally, a normal school is a professional school, a school of specialization. Whatever work is done is done for instruction itself, not as a preparation for instruction. The student is not only taught grammar, but is taught how the child conceives and thinks grammar. He is taught not only geometry, but how the boy thinks number relations. He is taught not only knowledge itself, but how the growing mind acquires knowledge. This result is accomplished, first, through thorough and liberal academic work; second, through the study of the child; third, through studying the philosophy of teaching, and fourth, through practice and training in the model school.

The library and the reading room of the Central State Normal School are furnished with the best books and current magazines that the market affords. These are open to all students every day except Sunday. The laboratories—chemical, physical, physiological, and biological—are well supplied with modern appliances for scientific experimentation and investigation. A new telescope has been added recently to the department of astronomy.

In connection with the Central State Normal School there is maintained a well-equipped training school, furnishing ample opportunity for practice in teaching on the part of those about to graduate from the institution.

In addition to the facilities for professional training mentioned above, there are maintained excellent literary societies, Young Men's Christian Association and Young Women's Christian Association, an orchestra, a band, and a lecture course of unsurpassed attractiveness.

The diploma given to the student upon graduation is a five-year Territorial certificate, and is renewable by the Territorial superin-

tendent of public instruction upon evidence of satisfactory work done in teaching. This diploma is therefore practically a life certificate.

More than 100 students have within the past nine years completed the normal school course of study, and hundreds of others are now teaching in the Territory who have received a partial training in this school. About one-half the students who attended this institution the past year expect to teach in some of the schools of the Territory next year. More than 350 schools will be directly benefited, therefore, through the efforts of the normal school the past year. It will be seen from these facts that the institution is subserving the ends for which it was established. The total attendance for 1903-4 was 761.

A large number of the students attending this institution earn the money necessary to pay their way through school by teaching a part of the year; they then attend school the remaining part. Tuition is free in all departments except that of instrumental music.

The faculty consists of 26 members, all of whom are men and women of special training, education, and teaching ability, who take a sympathetic interest in the welfare of the student.

During the past term a basement room in the old building, 60 by 60 feet, has been fitted up for a gymnasium, and has been equipped with all the modern appliances for physical culture, together with their adjuncts—bathrooms, lavatories, and lockers.

A manual training department and a kindergarten department will be established the fall term of the current year in connection with the training department.

Owing to the increased facilities for effective work added within the past year there is every reason to believe that the year 1904-5 will be the most successful year in the history of the institution.

#### THE NORTHWESTERN SCHOOL.

[T. W. Conway, president.]

The Northwestern Normal School, located at Alva, Okla., was founded by the Oklahoma legislative assembly in 1897, and was opened for work on September 20 of the same year, with an enrollment of 55 the first day, which number was increased to 166 before the close of the first school year. The growth of the school has been steadily advancing in numbers and efficiency. During the past year the enrollment reached the highest in the history of the school, the same being 753 at the close of the school year. The faculty has been increased from year to year, until it now consists of 24 regular teachers.

The following departments are maintained: Classical, modern language, scientific, kindergarten, commercial, music, and manual training. The last department to be added to the course is that of manual training, and a complete equipment has been secured to put the department in such a condition that it will meet the requirements of an up-to-date manual training school.

The prospects for a large attendance during the coming year are very flattering, and the board of education for normal schools has found it necessary to rent rooms to accommodate the music department.



Owing to the crowded condition of the normal building the manual training department will be obliged to take temporary quarters in the athletic building for the coming year.

One of the great needs of the Northwestern Normal is for more room to accommodate the large number of pupils who now attend the school.

It is to be hoped that a gymnasium may be provided within the next two years, wherein the students may have access to the best physical training, so necessary for the well-equipped teacher.

During the past school year many improvements have been made on the campus, such as putting out shade trees and building walks around the grounds and up to the normal building. No more sightly or beautiful spot can be found in the West than the site of the Northwestern Normal School.

The past school year has been one without interruption of any character from disease or other conditions, and this is largely due to the excellent location, the purity of the water supply, and the healthful sanitary conditions that prevail in and around Alva, the seat of the Northwestern Normal.

No other town in the West takes greater pride in building fine homes and beautifying the same than Alva. The thousands of shade trees of every description that are being cultivated and the hundreds of well-kept lawns that are being beautified speak well for the pride and judgment of our citizens in rendering the environments of the normal school commensurate with the immediate building and grounds. No other influence, outside the immediate contact of the teacher, has so lasting and beneficial effect as has the beautiful building and grounds and the well-kept homes that are constantly before pupils who are in attendance at the Northwestern Normal.

It has been the aim of the members of the faculty and all concerned during the past school year to make the normal school at Alva subserve the purpose for which it was created. Those acquainted with the history of this institution well know that there have been times when confusion and annoyance interfered very largely with the success and advancement of the same. These conditions do not now prevail, and the most strenuous efforts are now put forth to make efficient and practical the work now done in the institution.

Ample opportunity is furnished to all to do academic work. Special privileges are given to those who desire to make a study of child mind. All, before completing a course, must look thoroughly into the philosophy and systems of education, besides serving as apprentices during their senior year in doing practice teaching under the supervision of specialists.

The outlook for educational advancement in Oklahoma is very bright, and the Northwestern Normal School will be found in the front rank in her efforts to raise the standard of educational excellence, so that we may take first place in the sisterhood of States.

#### SOUTHWESTERN TERRITORIAL NORMAL SCHOOL.

[James R. Campbell, president.]

*Establishment.*—The legislature of 1901 authorized the establishment of a normal school in the southwestern part of Oklahoma, to be

known as the Southwestern Normal School. In compliance with this act a committee appointed by the governor, after carefully examining the different cities which were applicants for said school, finally selected Weatherford, in Custer County. This location gives a large scope of country from which to obtain students. All the counties surrounding Custer are well settled with an intelligent and progressive class of people who are deeply interested in education. The young men and women joyfully welcomed the coming into their midst of this educational institution. Weatherford is a healthful little city of about 2,500 people, and is located in a beautiful valley on Little Deer Creek.

*Object.*—The state in establishing normal schools aims to prepare young men and women to become teachers in our public schools. Statistics show that not more than one out of twenty of those who teach our children have had any special preparation for the work. It is largely a case of the blind leading the blind. The average intelligence of the people can not be raised unless we place in our schools as teachers of our children men and women who are superior in scholarship and professional skill. The state seeks to do this by the establishment of normal schools.

*Building.*—The normal building is located on an elevated plat of ground north of the city. A most beautiful landscape stretching in every direction, in consequence of its great expansiveness, has a tendency to expand the mind of the onlooker. The building is a large brick structure, modern in all its equipments, and very convenient for normal-school purposes. It is heated throughout with steam, lighted with electricity, furnished with baths and other modern facilities. A good gymnasium room has been thoroughly equipped, and a room for manual training will be fitted up for use the coming year. The building contains, besides offices, class rooms, cloak rooms, etc., a large auditorium, seated with fine opera chairs.

*Campus.*—The building stands in the center of a campus of 40 acres. Drives, trees, and other decorations adorn the campus, making it very attractive. Broad sidewalks have been made leading across the grounds to the building. Trees line either side of these walks, which after a few years will afford ample shade.

*Library.*—The library room has been furnished with steel stacks, and several hundred books have been purchased. The reading room adjoining the stack room, has been fitted up with elegant library tables and chairs. A large number of the best magazines and periodicals come to the library, and students are encouraged to do considerable reading. The Congressional Record came to the library every day, and students were able to keep in touch with the proceedings of Congress during its session. A number of bound volumes of the Government reports have been received, which contain a vast amount of valuable information not to be found elsewhere.

*The beginning.*—The Southwestern Normal School opened on the 15th day of September, 1903, in a church and four vacated business houses. The enrollment the first day was 113, and at the close of the first term it had reached 196. The original quarters were occupied until February 23, 1904, when the school was moved into the new normal building. The enrollment at the end of the winter term was 219, and the total number enrolled for the year was 356. The average age of the students was 19.6 years.



*Training school.*—Owing to the lack of funds and school room no training school above the kindergarten was established. To comply with the law made by the legislature of 1903 the kindergarten was established, thoroughly equipped, and a very efficient kindergarten teacher placed in charge. The number enrolled in this department was 29.

A normal school should have a training school accommodating all the grades, in which prospective teachers can be trained to teach under the careful guidance of a skilled critic teacher. It is to be hoped that ample facilities will be provided and that all the grades from first to eighth and also a mixed grade can be established.

*Course of study.*—The course of study is thorough. The first requisite of a teacher is scholarship. This, coupled with culture, character, and professional skill, will give power. The aim of the Southwestern is to give a broad and thorough academic education, and to this purpose it has a very complete course. It also aims to develop skill in imparting instruction, and to this end it emphasizes professional training. Knowing that normal schools are the only sources from which our common schools can be supplied with teachers, the Southwestern presents several courses of study, in order that students may be able to specialize and thereby prepare themselves for teaching special branches in high schools as well as in the lower grades. Besides the regular course the subjects have been formed into six groups called, respectively, the Latin, German, history and civics, mathematics, English, and scientific groups. Any one desiring to specialize in Latin will take the Latin group, in which he can get six years of Latin. In the German group he can get four years of German and two years of Spanish or French. In mathematics he can get six years of work above arithmetic.

A scheme of credits has been arranged which will greatly assist students and others in determining the time necessary to complete any course.

Sixteen men and women compose the faculty. Each member was selected because of his special fitness for the work.

*Music.*—A four-year course in vocal and a six-year course in instrumental music are offered. Very efficient instructors have been secured for these departments. Students can obtain a thorough training in either department. A tuition of \$5 for students who carry three other studies is charged in either department. A tuition of \$15 a term is charged for students who take music alone.

*Commercial department.*—The work in this department is given in two courses. Course one is the bookkeeping course, and course two the stenography and typewriting course. These are very popular and will serve a good purpose. Bookkeeping, stenography, and typewriting are all taught in many of the schools of the Territory, and the normal school should supply the teacher for this work. No tuition is charged in this department.

*Conditions of admission.*—Graduates from reputable colleges or universities will be admitted on presenting their diplomas, and will graduate in one year. Graduates from full four-year high school courses will be entitled to enroll on presenting their diplomas. They will be graduated in two years. Graduates from other high schools in cities or towns that have shorter courses are admitted on their diplo-



mas and given credit for all the work they have done. Teachers holding State certificates issued by the Territorial board of education will be credited for all work completed on presentation of certificates. Teachers holding first-grade county certificates will be admitted to the three-years course on presenting certificates, provided the work they have done proves satisfactory. Graduates from the common schools will be admitted to the subnormal course on presentation of their diplomas. Students from other normal schools or reputable colleges will be given credit for all work they have done. Students will be given advanced standing on an examination given by the members of the faculty.

*Encouragement.*—The members of the faculty of the Southwestern Normal School are very much encouraged over the future prospects of the school. Although its record during the past year was phenomenal, the prospects for the coming year are very flattering. Indications are good for a large enrollment, the work will have more continuity, and the students will be more regularly classified.

#### THE AGRICULTURAL AND MECHANICAL COLLEGE.

[A. C. Scott, president.]

The Oklahoma Agricultural and Mechanical College was established and located at Stillwater by an act of the Territorial legislature, which took effect December 25, 1890, accepting the provisions of various Federal statutes in aid of colleges for the benefit of agriculture and the mechanic arts. The town of Stillwater was required to vote bonds in the sum of \$10,000 and to provide not less than 80 acres of land. The bonds were voted and 200 acres of land provided. The college has since purchased 160 additional acres of land. The institution opened in the fall of 1891.

The past year has been in results perhaps the most satisfactory in the history of the college. The attendance has not increased. As a matter of fact, the enrollment of students stood at 417 as against 435 the year preceding. But this condition was clearly anticipated a year ago, and was the result of radical changes adopted then, abandoning the preparatory department except as an incident of the twenty weeks' courses in agriculture and domestic economy, and very materially raising the standard of admission to the freshmen class. Twenty students—16 young men and 4 young women—received the degree of bachelor of science in June. Of these, 8 graduated in the general science course, 8 in the mechanical course, and 4 in the agricultural course.

In the last report of this institution attention was called to the establishment of the "School of Agriculture and Domestic Economy," being a two years' course of twenty weeks each, particularly designed for boys and girls from the farm who are unable to take a full college course, and offering instruction in agriculture, horticulture, and animal husbandry to the young men, and training in cooking, sewing, home management, etc., to the young women, together with work in the common school branches to such as desire or need it. This department was looked upon as an experiment, but the first year's trial seems to have justified its establishment, since 115 young men and women enrolled for the work. As a result of the pressure

of numbers in this department, as well as in the other short courses and the regular courses, it has been found necessary to build and equip a dairy building and a greenhouse. These are both being built of brick, and will be ready for occupancy by October 15, 1904. They are being constructed with funds saved from the proceeds of rentals of reserved public lands for the benefit of this institution.

The resources of the college now amount to about \$66,000 per year. Of this \$37,500 comes from the Government to the college and experiment station (Morrill and Hatch funds, respectively), \$12,000 from the Territorial tax-levy fund, about \$8,000 from the land-lease fund, \$2,500 from the vaccine fund (a Territorial appropriation), and the balance from incidental fees, station sales, etc. Of the Government fund of \$37,500 above mentioned, however, \$15,000 (the Hatch fund) goes exclusively to the experiment station and is used solely for purposes of experimentation and the publication of results. The equipment for instruction now represents a valuation of \$91,845.60, and the buildings and grounds, \$113,500.

Three regular courses, each leading to the degree of bachelor of science, are given—the general science course, the agricultural course (including horticulture and animal husbandry), and the mechanical engineering course (including electrical engineering). In the general science course opportunity is given for specialization in chosen sciences. Special courses are given in stenography, typewriting, bookkeeping, and printing, and a special short course (eight weeks) is given during the winter term in agriculture and mechanic arts. In the general science course all young women are required to take a reasonable amount of work in domestic economy, and they may specialize in this line.

The agricultural experiment station is connected with this institution and a department of it. While its work, as above stated, is devoted solely to experimentation and the publication of results, incidentally it is a valuable source of illustration and affords a stimulus to students in every branch of science. Its bulletins now go to 20,000 farmers of Oklahoma and Indian Territory.

Tuition is free, except to students outside of Oklahoma and Indian Territory. An incidental fee of \$1 per term is charged. Text-books cost from \$3 to \$4 per term. Board, with room, in private families can be obtained for from \$2.50 to \$3.50 per week; furnished rooms, from \$2.50 to \$5 per month. A considerable number of the students board in students' clubs, thus reducing expenses in that line to \$1.75 to \$2 per week. Very many of the students are practically self-supporting, making their way by work done during the summer vacation and by labor during the academic year in the town, about the college, and in connection with the operations of the college farm.

#### THE COLORED AGRICULTURAL AND NORMAL UNIVERSITY.

[Inman E. Page, president.]

The university at Langston is maintained by the Territory for the purpose of giving to the negro educational facilities similar to those enjoyed by the white people at the normal schools, the Agricultural and Mechanical College, and the Territorial university.

This institution has 160 acres of land and seven buildings, two of



which are used for school purposes, two for dormitories, and three for residences. It also has a barn in course of erection, which when completed will cost \$3,100. The departments in actual operation are as follows: The agricultural, mechanical, sewing and millinery, collegiate, college preparatory, normal, elementary, and musical.

At present nearly 100 acres are under cultivation, and considerable attention is being given to the variety of crops which it is possible for the soil to produce and to the quantity of each which an acre will yield. Sufficient grain has been raised to supply the wants of the university live stock, and the garden has been so successfully managed that the students will be furnished better board than in previous years.

What is true of the farm is also true of blacksmithing, carpentry, machine work, and the various industries which are studied by the girls. The showing made in these different lines of work during the past year is the best in the history of the school. The boys have given evidence of the progress which they are making in acquiring industrial education by the variety of machines, tables, and cases which they have made and by the work which they have done in erecting buildings on the grounds. The record made by the girls in sewing, millinery, fancy work, and housekeeping, as seen in the dormitory, compares favorably with the work of similar character which is done in many of the older and larger institutions of the country.

While special emphasis is being placed upon industrial training, work along other lines is not neglected. A number of students are preparing themselves to teach in the schools of the Territory, and hence are availing themselves of the facilities offered by the normal department. In May last four very promising young women were graduated from this department and given certificates which will permit them to teach in the Territory for five years without further examination. Two other classes have been graduated from this department, and have thus far made a record in their profession which is very creditable to the university.

When the school opened in the fall of 1898 it had a faculty consisting of 4 teachers and an enrollment of 41 students. It now has 13 teachers and an enrollment of 271 students, who represent not only different parts of Oklahoma and the Indian Territory, but other parts of the Southwest as well. Thus far the attendance each year has been greater than that of any preceding year. Judging from this fact and from the great interest the colored people of the Territory are manifesting in its work, those in charge of the university are expecting an enrollment of 300 students during the ensuing year.

Owing to the fact that the negro population was comparatively small, it was not expected by those who founded this institution that it would require large sums of money to conduct it successfully. This fact is seen in the action of the legislature of 1897, which passed the bill creating the school and appropriated \$5,000 for its use during the following biennial period. That it has succeeded far beyond the expectation of this body is made evident by the appropriation of each succeeding legislature. In 1899 the legislature made an appropriation of \$10,000 for building purposes, provided a special fund by a tax levy of one-tenth of a mill, set apart one-fifth of the land-lease money and one-tenth of the amount which is paid to the Territory annually by the Federal Government, in compliance with the Morrill



act, and made an appropriation of \$15,000 out of a fund which had been accumulating at the Stillwater College for the maintenance and equipment of the university. The legislature of 1901 not only appropriated the usual amount for support, but also provided for the erection of an addition to the main building, of the boys' dormitory, and a residence for the president. In 1903, besides giving an ample appropriation to meet the current expenses of the next two years, the legislature made an appropriation of \$5,000 to enable the regents to install a steam heating plant in the main building and the girls' dormitory.

It is gratifying to me to be able to report that this institution has thus far made an excellent record in the expenditure of the various sums of money appropriated for its benefit, and that it is doing a great work in preparing the young men and women of the negro race for useful citizenship.

#### UNIVERSITY PREPARATORY SCHOOL.

[J. W. Kelley, president.]

The University Preparatory School of Oklahoma, founded by legislative enactment of 1901, has finished two years of work. During that time the faculty, now consisting of 15 instructors, has been more than doubled. The number of students in attendance the past year was 401.

Tonkawa is a rapidly growing town of over 2,000 in the southwestern part of Kay County, on the Hunnewell branch of the Santa Fe route. It is located on an elevation in the Salt Fork Valley, is surrounded by some of the finest agricultural land in Oklahoma, and has an excellent and inexhaustible water supply, in some places not more than 15 feet from the surface. From every standpoint the town is in a most healthful locality, and is an admirable place for the location of a Territorial school.

The building is a structure 54 by 96 feet, of limestone and pressed brick, containing four floors. The first floor is devoted to the armory, and the commercial and science departments; the second to study room, library, and recitation rooms; the third to chapel, offices, art room, and recitation room; the fourth to music rooms and society halls.

The campus, consisting of 20 acres, adjoins Tonkawa on the east. With the building as a center, the largest possible circular drive, bordered on each side by a double row of forest trees, has been laid out. Within the circular space are many elms, North Carolina poplars, soft maples, and black locusts. Three rows of trees extend entirely around the campus. Inside of them and outside of the drive is a luxuriant growth of Bermuda grass. Sufficient space is reserved for tennis courts, baseball diamond, football gridiron, and athletic field.

The purpose of the University Preparatory School is, primarily, to prepare young men and women for freshman standing in the University of Oklahoma at Norman. In addition to the regular preparatory work, considerable attention is given to business training, music, elocution, and art.

The institution is organized as follows: (1) The regularly pre-

paratory school, with three courses of study of four years each, the Latin, the modern language, and the English or scientific; (2) the commercial school, with two courses of one year each; (3) the school of music, which offers courses in piano, voice, violin, madolin, guitar, and clarinet, with opportunities for organization work in band, orchestra, club, and choruses; (4) school of art; (5) school of elocution; (6) a subpreparatory year of work in the common branches providing instruction for students not having the preparation required to do first year's work.

The institution is supported by one-seventh of the rental from sections 13 reserved for higher education and by legislative appropriation, the most recent of which was \$12,000 each year for two years.

The faculty consists of 15 university and college trained and experienced teachers. They are devoted to their work and spare no pains and leave nothing undone in their earnest endeavors to advance the students, to render all proper assistance, to keep before them correct ideals, and to influence their lives for right living.

The physical needs of the students are fully recognized. The school encourages outdoor exercises and properly regulated athletic sports. The various teams are managed by an instructor who looks after the finances, arranges the schedule of games, and accompanies them on their trips out of town. Good work in the class room is a condition precedent to membership in teams, no student being allowed to participate in athletics to the detriment of his more important school duties.

The numbers who have completed courses during the two years are as follows:

In 1903:

Business course.....	6
Stenographic course.....	6

In 1904:

Regular preparatory course.....	5
Business course.....	6
Stenographic course.....	7
Teachers' review course.....	13

The board of regents at their regular meeting June 10, 1904, added the department of military training and appointed Capt. Ira L. Reeves, U. S. Army, retired, commandant. The school after inspection by Major Partello had been made the recipient by the War Department of the detail of an officer on full pay from the Government. All male students who are not physically incapacitated are required to take the practical work of the department.

There are two literary societies, the Fergusonian for young men and the Athenian for young women. Much interest has been manifested along all lines of society work, such as debates, essay writing, oratory, extemporaneous speaking, and parliamentary practice.

Both the Young Men's Christian Association and Young Women's Christian Association have organizations, which have already proved themselves to be important factors in the spiritual lives of the students.

Tuition is free in all departments, music, elocution, art, and business not excepted, to residents of Oklahoma and Indian Territory, the only restriction being that, in order to be entitled to free instruction in music, students must take at least three regular literary studies.

## MISSION SCHOOLS.

The industrial schools maintained by various religious denominations are mentioned below, together with their locations and attendance:

Cache Creek, boarding (Reformed Presbyterian), Anadarko	50
Mary Gregory Memorial (Presbyterian), Anadarko	60
Methvin, boarding (Methodist), Anadarko	80
St. Patrick's, boarding (Catholic), Anadarko	125
St. John's, boarding (Catholic), Pawhuska	150
St. Louis, boarding (Catholic) Pawhuska	125
St. Mary's Academy (Catholic), Sacred Heart	50
St. Benedict's Academy (Catholic), Sacred Heart	50
Friends' Mission, Tecumseh.	

## INDIAN BOARDING SCHOOLS.

Below are enumerated the boarding schools supported by the Government, and the attendance at each:

Arapaho	150	Kaw	44
Cheyenne	140	Osage	180
Cantonment	120	Ponca	100
Red Moon	75	Oto	75
Seger	150	Tonkawa	24
Chillico	600	Pawnee	130
Fort Sill	150	Sauk and Fox	100
Rainy Mountain	100	Shawnee	100
Riverside	150		

## BANKING.

[Paul Cooper, Territorial bank commissioner.]

There are 92 national banks doing business in the Territory. Their total capitalization is nearly \$3,500,000.

There are also 250 banks operating at this time under charters granted by the Territory. Included in this list there are 2 banks with capital of \$50,000, 1 with \$30,000, 16 with \$25,000, 2 with \$20,000, 13 with \$15,000, 2 with \$12,500, 1 with \$12,000, 1 with \$10,200, 92 with \$10,000, 3 with \$8,000, 2 with \$7,500, 1 with \$7,000, 4 with \$6,000, 1 with \$5,500, 109 with \$5,000.

Number of banks examined during the year, 131.

Total amount of fees collected and turned over to Territorial treasurer, \$2,105.

*Consolidated statement of the condition of all Territorial banks in Oklahoma Territory at close of business on June 2, 1904.*

## RESOURCES.

Loans and discounts	\$5,651,191.38
Overdrafts	203,038.02
Bonds, warrants, and claims	309,555.19
Due from banks	2,211,654.07
Banking house, furniture, and fixtures	511,621.88
Other real estate and mortgages	63,558.50
Cash items	132,534.89
Cash	863,555.81
	<hr/>
	9,946,709.74



## LIABILITIES.

Capital stock	\$2,334,700.00
Surplus	255,419.82
Undivided profits, less expenses	389,552.54
Deposits:	
Subject to check	\$5,802,843.04
Time certificates	780,966.55
Cashier's checks	13,385.20
Due to banks	151,671.60
	6,748,866.39
Bills payable	159,113.74
Bills rediscounted	59,057.25
	9,946,709.74
Number of banks reporting	244
Average reserve held	per cent 46
Average per cent of surplus and profits to capital stock	do 27

*Consolidated statement of the condition of all national banks in Oklahoma Territory at close of business on June 9, 1904.*

## RESOURCES.

Loans and discounts	\$8,595,144.23
Overdrafts	321,029.53
United States bonds to secure circulation	1,468,450.00
United States bonds to secure deposits of United States	230,000.00
United States bonds on hand	690.00
Premiums on bonds	146,250.74
Bonds, warrants, and claims	691,486.44
Banking house, furniture, and fixtures	715,442.92
Other real estate and mortgages	44,148.00
Due from banks	3,462,334.72
Revenue	3.20
Due from United States Treasurer	6,373.71
5 per cent redemption fund	72,785.00
Cash items	244,144.64
Cash	1,469,786.70
	17,468,069.83

## LIABILITIES.

Capital stock	\$3,450,300.00
Surplus	357,195.20
Undivided profits, less expenses	410,243.32
Circulation	1,454,800.00
Deposits:	
Due to banks	\$1,270,876.16
Unpaid dividends	104.50
Individual	10,221,895.00
United States	142,576.79
	11,635,452.45
Bills payable	82,500.00
Bills rediscounted	77,206.18
Other liabilities	372.68
	17,468,069.83
Number of banks reporting	92
Average reserve	per cent 34
Average per cent of surplus and profits to capital stock	do 22

*Consolidated statement of the condition of all banks in Oklahoma Territory, both Territorial and national, from call of the bank commissioner of Oklahoma, June 2, 1904, and the call of the Comptroller of the Currency of June 9, 1904.*

## RESOURCES.

Loans and discounts	\$14, 246, 335. 61
Overdrafts	524, 067. 55
United States bonds and premiums	1, 845, 390. 74
Bonds, warrants, and claims	1, 001, 041. 63
Banking house, furniture, and fixtures	1, 227, 064. 80
Other real estate and mortgages	107, 706. 50
Due from banks	5, 673, 988. 79
Revenue	3. 20
Due from United States Treasurer	6, 373. 71
5 per cent redemption fund	72, 785. 00
Cash items	376, 679. 53
Cash	2, 333, 342. 51
	<hr/> 27, 414, 779. 57

## LIABILITIES.

Capital stock	\$5, 785, 000. 00
Surplus	612, 615. 02
Undivided profits, less expenses	799, 795. 86
Circulation	1, 454, 800. 00
Deposits	18, 384, 318. 84
Bills payable	241, 613. 74
Bills rediscounted	136, 263. 43
Other liabilities	372. 68
	<hr/> 27, 414, 779. 57

Total number of banks reporting in Oklahoma	336
Average reserve held	per cent 40

## LEGAL DEPARTMENT.

[P. C. Simons, attorney-general.]

The work of the office of the attorney-general has increased in proportion to the marvelous development of our Territory and by reason of its growth in population, extension of its commercial relations, and the opening of new lands to settlement. What is true of this office is true also of the courts, reference being especially had to the district and supreme courts, the respective dockets of which are crowded with business. As is true of any community going through the formative process, new questions are constantly arising demanding the services of the attorney-general's office in behalf of the interests of the Territory.

Under the laws of our Territory the attorney-general is required to appear for the Territory and prosecute and defend all actions and proceedings, civil or criminal, in the supreme court in which the Territory shall be interested as a party, and shall also, when requested by the governor or either branch of the legislature, appear for the Territory and prosecute or defend in any other court or before any officer, in any cause or matter, civil or criminal, in which the Territory may be a party or interested, and shall attend to all civil cases remanded by the supreme court to any district court in which the Territory is a party or interested. It is also his duty, at the request of the governor, auditor, or treasurer, to prosecute any official bond or any contract in

which the Territory is interested upon a breach thereof, and to prosecute or defend for the Territory all actions, civil or criminal, relating to any matter connected with either of their departments. He is also required to consult with and advise the county attorneys, when requested by them, in all matters pertaining to the duties of their office; also to give his opinion, when requested, in writing, upon all questions of law submitted to him by the legislature or either branch thereof, or by the governor, auditor, treasurer, or superintendent of public instruction; also, whenever requested by the Territorial auditor, treasurer, or superintendent of public instruction, he is required to prepare proper drafts for contracts, forms, and other writings which may be wanted for the use of the Territory. In addition to these general duties imposed upon the attorney-general, there are many special acts requiring him to look after specific matters.

The volume of criminal business coming on appeal to the supreme court, while large, is yet not out of proportion to our population, and speaks well for the vigilance of the officers whose duty it is to enforce the laws and for the general law-abiding character of our people.

There has also been a large amount of civil litigation in which the Territory is interested and which has required the services of this officer.

The following will serve as an indication of the business of the attorney-general's office during the past year:

Thirty-six criminal cases have been handled by him in the supreme court, being appeals from the various district courts. In each case in the supreme court the attorney-general takes entire charge of the case, examines it carefully, prepares printed brief if deemed necessary, and often makes oral argument.

Sometimes in criminal cases appeals are taken to the Supreme Court of the United States from the judgments of the Territorial supreme court, and one such case is pending now in the United States Supreme Court, being the case of *John T. New v. The Territory of Oklahoma*. In such cases the attorney-general also represents the Territory and files brief and makes argument.

A number of civil actions in the district and supreme court have been handled by this office, growing out of the various departments of the Territorial government. The most important case now pending is entitled "*Territory of Oklahoma v. American Bonding Company of Baltimore, a corporation*," and is in the district court of Logan County. This is an action to recover the sum of \$244,053.21 from the bonding company, being the amount of Territorial funds on deposit in the Capital National Bank of Guthrie, Okla., at the time of its failure on April 4, 1904. The bank had been designated as one of the Territorial depositories, and the surety company had executed a bond of \$250,000 on its behalf to protect the Territory from loss. After the failure of the bank demand was made upon the surety company that it make the loss good, but it refused to do so, and suit was instituted against it by the Territory. It is confidently expected that the Territory will recover judgment in the case against the surety company and that it will be compelled to pay the loss.

Suit will also be commenced against the Fidelity and Guaranty Company, which executed a bond of \$25,000 for the bank a few days prior to its failure.



Legal proceedings are also being vigorously prosecuted in the courts to exterminate illegal practitioners of medicine in the Territory, which affect quite a number of persons who are attempting to practice medicine without proper qualification therefor.

Hardly a day passes but that the services of the legal department are required by some of the Territorial officials in advising and consulting with them on matters of importance to the Territory or in rendering official opinions. The requests from the various county attorneys for opinions from this office are numerous and often present very intricate propositions for consideration.

The official correspondence of the attorney-general is therefore necessarily heavy.

In the past year he has been called upon for many official opinions, some of which have been on matters of great importance to the Territory. Probably in this time he has rendered one hundred written opinions upon various subjects, all of which have been very fully considered and prepared with great care.

The salary appropriation by the legislature for the attorney-general is entirely too small, and is not in keeping with the high character of professional services required at his hands and should be very materially increased.

The appropriation for the contingent expenses of his office is likewise inadequate and should be increased.

In view of the fact that the Territorial legislature will convene the coming winter, it may be of interest to suggest a few of the matters that need legislative attention in this Territory. Perhaps the most important of these will be the passage of a new revenue law. Our present tax laws are almost in hopeless confusion, having been enacted and then amended in so many respects that in their present condition they need revision in order to make them effective. Fortunately, our taxpayers have, with few exceptions, cheerfully paid their taxes, and they have had no cause for complaint, owing to the economical administration of Territorial affairs; but under our present system much confusion is likely to arise in the various counties in their local affairs, and this matter should receive speedy attention, to the end that the taxing machinery of the Territory may be simple and easily understood, yet effective and complete.

Much good has been accomplished by the oil-inspection law, but it needs several amendments to make it effective. Under the present system the inadequate fees allowed deputy inspectors are a serious hindrance to the work of the chief inspector, and in many instances increase his burdens. Also in its present condition the law makes it very inconvenient for local merchants to have small shipments of oil inspected.

Some radical changes need to be made in the law creating the Territorial board of health and with regard to the licensing of physicians to practice medicine in this Territory. Under the present law the board are authorized to grant licenses, conduct examinations, etc., but have no authority to revoke a license when it is once granted. They should be authorized to revoke a license which is obtained by fraud or misinterpretation or in the event of the practitioner becoming of disreputable character. At the present time these remedies

can be had in the courts, but it would be more speedy and effective if the board were granted such authority.

#### TERRITORIAL LAW LIBRARY.

[J. W. Foose, librarian.]

The library is out of debt, with a credit of \$1,604.44 in the treasury.

The two greatest needs of the library at present are a liberal book fund and a suitable building large enough to properly shelve and place the books. In March, 1904, an extra room holding over 2,000 volumes was added, but this lacks much in giving sufficient space. We have only shelf room for the text-books, laws, State reports, West Reporter system, and some other necessary law books, while some five or six thousand volumes of United States and State Department documents remain packed away in the storeroom for lack of space in the library.

During the ten years' existence of the library a large and splendid selection of books has been accumulated, until to-day Oklahoma can boast of a library of which an older Commonwealth might be justly proud. The Oklahoma publications are very much in demand, as letters of inquiry from all parts of the United States and many foreign countries are received. One thousand volumes each of volumes 12 and 13 of Oklahoma Supreme Court Reports have recently been issued and are very much in demand.

#### ACCESSIONS.

This office has received during the past year:

	Volumes.
By purchase -----	305
By donations -----	104
By exchange with other States -----	381
As a depository for United States Department documents -----	223
<b>Total</b> -----	<b>1,013</b>
On shelves last report -----	7,071
Oklahoma publications on hand -----	7,389
Estimated number United States and State Department documents in storeroom -----	5,000
<b>Total</b> -----	<b>20,473</b>

#### VALUE.

The library and fixtures are valued at \$65,000. This amount includes \$22,000 worth of Oklahoma publications held for sale, the proceeds of which are added to the library fund.

Twenty thousand dollars insurance is carried on the library and storerooms.

#### OKLAHOMA NATIONAL GUARD.

[Adj't. Gen. E. P. Burlingame.]

The organizations remain the same as last year, except that the First Battery has been disbanded and the officers and men honorably discharged. It was not possible to provide the battery with guns and a suitable armory for their care from the allotment and legislative appropriation. The remaining organizations have been furnished with suitable equipments and are prepared to engage in active service

in the field. The reserve of camp equipage, bedding, messing utensils, etc., in the hands of the adjutant-general can be issued on the instant.

The annual encampment was held at Guthrie October 10 to 17, 1903. Maj. H. J. Ripley, Eighth Cavalry, U. S. Army, was present as instructor, and the occasion was one of much profit. On November 30, 1903, the infantry companies and the engineer corps were supplied with the new service magazine rifle, and during the winter and spring the entire guard was furnished with cotton Khaki uniforms and shelter tents. Every officer has a Colt's revolver. A liberal supply of ammunition for rifles and revolvers has been issued for target practice. The new firing regulations were received from the War Department about the middle of June.

The inspection of the guard by militia officers was completed in November, 1903, and an inspection by an army officer, as provided by the act of January 21, 1903, was made by Capt. T. Q. Donaldson, Eighth U. S. Cavalry, during the month of April, 1904. Following the receipt of the report of Captain Donaldson by the War Department, this office was advised that—

The Department is exceedingly gratified at prompt and commendable action of the militia authorities of the Territory in having accomplished as much as has been done during the past year in the way of arming and equipping its organized militia, and that it has done no more is to be attributed solely to the insufficiency of means at its disposal.

The allotment of the \$1,000,000 appropriation under section 1661, United States Revised Statutes, was \$7,072.37 for the fiscal year ending June 30, 1903. For the year ending June 30, 1904, the total allotment from this appropriation was \$13,103.13, to which \$8,657.48 was added in allotments under the act of March 2, 1903. This entire amount of \$21,760.61 was wholly consumed in requisitions for articles of equipment. The allotment for the fiscal year ending June 30, 1905, is \$13,103.13. It has been decided by the authorities at Washington that a portion of this sum may be used under the provisions of section 14 of the new militia law, and it seems probable that a sufficient amount for paying the troops who attend the encampment this year can be spared for that purpose.

The numerical strength of the guard, officers and men, on June 30, 1904, was as follows:

Field and staff -----	26
First Regiment:	
Company A -----	39
Company B -----	70
Company C -----	52
Company D -----	73
Company E -----	40
Company F -----	56
Company G -----	36
Company H -----	71
Company I -----	69
Company K -----	35
Company L -----	47
Company M -----	47
Hospital Corps -----	27
Engineer Corps -----	54
Signal Corps -----	25
Troop A -----	36
Total -----	803



*Official roster of the Oklahoma National Guard, June 30, 1904.*

	Station.	Date of commission.	To rank from.
Governor T. B. Ferguson, commander in chief.	Guthrie	Dec. 9, 1901	Dec. 9, 1901
Brig. Gen. E. P. Burlingame, adjutant-general, ex-officio quartermaster-general, commissary-general, paymaster-general, and chief of ordnance.	do	July 9, 1901	July 9, 1901
Col. Samuel Billings, inspector-general.	Enid	May 10, 1902	May 10, 1902
Maj. Harry W. Pentecost, judge-advocate-general.	Guthrie	do	Do.
Maj. John W. Duke, surgeon-general.	do	do	Do.
Capt. Seymour Foose, aid-de-camp.	Watonga	Dec. 27, 1901	Dec. 27, 1901
Capt. William A. Knipe, aid-de-camp.	Perkins	May 10, 1902	May 10, 1902
Capt. James M. McConnell, aid-de-camp.	Guthrie	Mar. 16, 1903	Feb. 25, 1903
FIRST REGIMENT INFANTRY.			
Col. Roy Hoffman.	Chandler	Feb. 19, 1900	Feb. 19, 1900
Lieut. Col. Charles West.	Enid	June 9, 1903	May 20, 1903
Maj. Elta H. Jayne.	Edmond	Nov. 18, 1901	Oct. 16, 1901
Maj. Ralph J. Ramey.	Oklahoma City	June 9, 1903	May 20, 1903
Maj. Edward G. M. Overholser.	do	July 14, 1903	June 25, 1903
Capt. Job Ingram, chaplain.	Lawton	Dec. 26, 1899	Oct. 7, 1899
Capt. Edgar West Jones, quartermaster.	Guthrie	Apr. 4, 1901	Mar. 29, 1901
Capt. Jacob C. Herr, ordnance officer.	Chandler	Aug. 18, 1903	June 25, 1903
Capt. Charles F. Barrett, commissary.	Shawnee	Sept. 21, 1901	Sept. 20, 1901
Capt. Fred W. Hunter, adjutant.	Oklahoma City	Jan. 18, 1904	Jan. 18, 1904
Capt. Walter S. Ferguson, inspector rifle practice.	Guthrie	Aug. 18, 1903	June 25, 1903
First Lieut. Ross R. Way, battalion adjutant.	Kingfisher	Sept. 18, 1902	Aug. 14, 1902
First Lieut. Ray McElhinny, battalion adjutant.	Chandler	Apr. 11, 1903	Mar. 16, 1903
First Lieut. William Mattingly, battalion adjutant.	Oklahoma City	do	Do.
Company A:			
Capt. Geo. E. Dunnica.	Guthrie	July 8, 1901	July 6, 1901
First Lieut. Wm. O. Holcomb.	do	Sept. 17, 1902	Sept. 6, 1902
Second Lieut. Rutherford Ross Henry.	do	June 9, 1903	Jan. 1, 1903
Company B:			
Capt. Daniel J. Norton.	Chandler	Aug. 22, 1901	Aug. 13, 1901
First Lieut. Lewis E. Martin.	do	July 14, 1903	June 29, 1903
Second Lieut. Bennett McCoy.	do	do	Do.
Company C:			
Capt. Roy W. Thomas.	Medford	Sept. 3, 1901	Sept. 3, 1901
First Lieut. Eslie Q. Walton.	Pond Creek	Feb. 23, 1904	Dec. 5, 1903
Second Lieut. Mervin L. Thomas.	do	do	Do.
Company D:			
Capt. Eltie Wright.	Blackwell	Nov. 18, 1902	Nov. 18, 1902
First Lieut. Walter S. Vilott.	Nardin	Feb. 23, 1904	Jan. 1, 1904
Second Lieut. Wm. F. McLaury.	Blackwell	Mar. 11, 1904	Mar. 11, 1904
Company E:			
Capt. James M. Grimsley.	Pawnee	July 8, 1901	July 8, 1901
First Lieut. Henry Sternberg.	do	Feb. 23, 1904	Feb. 3, 1904
Second Lieut. Chas. Marion Adams.	do	do	Do.
Company F:			
Capt. A. L. Emery.	Watonga	Aug. 10, 1903	Aug. 10, 1903
First Lieut. G. W. Ferguson.	do	Oct. 10, 1903	Oct. 10, 1903
Second Lieut. A. L. Edgington.	do	do	Do.
Company G:			
Capt. Harry C. Overfelt.	Hennessey	July 26, 1902	June 27, 1902
Second Lieut. Jesse J. Combes.	do	Nov. 19, 1902	Nov. 19, 1902
Company H:			
Capt. C. B. Blake.	Edmond	Nov. 18, 1901	Oct. 16, 1901
First Lieut. Alfred Spangler.	do	June 9, 1903	Jan. 13, 1903
Second Lieut. Ober Elihu Haug.	do	do	June 1, 1903
Company I:			
Capt. E. G. Douglass.	Alva	Dec. 27, 1901	Aug. 12, 1901
First Lieut. Jesse R. Langley.	do	do	Do.
Second Lieut. Robert Lee Watson.	do	Aug. 4, 1902	Aug. 4, 1902
Company K:			
First Lieut. ———.	Enid	Sept. 21, 1901	Sept. 20, 1901
Second Lieut. Benjamin F. Lewis.	do	June 14, 1904	May 2, 1904
Company L:			
Capt. Herman P. Wetzel.	Perry	Apr. 15, 1902	Feb. 26, 1902
First Lieut. Frank M. Whinnery.	do	June 16, 1903	June 2, 1903
Second Lieut. John J. Rubash.	do	May 9, 1904	Oct. 9, 1903
Company M:			
Capt. M. F. Highley.	Oklahoma City	July 14, 1903	June 26, 1903
First Lieut. William Stuart Douglas.	do	Feb. 23, 1903	Dec. 17, 1903
Second Lieut. Samuel Hudson Harrelson.	do	Feb. 23, 1904	Feb. 12, 1904
HOSPITAL CORPS.			
Capt. Floyd H. Racer, surgeon.	Woodward	Nov. 18, 1901	Oct. 16, 1901

*Official roster of the Oklahoma National Guard, June 30, 1904—Continued.*

	Station.	Date of commission.	To rank from.
<b>TROOP A.</b>			
Capt. Thomas A. Neal .....	Guthrie .....	Aug. 19, 1901	Aug. 19, 1901
First Lieut. Gustave W. Dimke .....	do .....	Nov. 20, 1902	Nov. 20, 1902
Second Lieut. Geo. H. Klein .....	Edmond .....	Jan. 31, 1903	Nov. 29, 1902
<b>SIGNAL CORPS.</b>			
Capt. Frank H. Robertson .....	Blackwell .....	Nov. 11, 1903	Nov. 5, 1903
First Lieut. Orrin F. Peck .....	do .....	do .....	Do.
Second Lieut. Samuel Irad McElhoes .....	Tonkawa .....	May 9, 1904	June 26, 1903
<b>ENGINEER CORPS.</b>			
Capt. Frank B. King .....	Lawton .....	Aug. 18, 1903	Aug. 4, 1903
First Lieut. Frank Levant Ketch .....	do .....	do .....	Do.
Second Lieut. Samuel Irad McElhoes .....	do .....	do .....	Do.
Second Lieut. Alva J. Niles, unassigned .....	Guthrie .....	May 9, 1904	May 9, 1904

#### OIL INSPECTION.

[F. A. Ashton, inspector.]

Since the appointment of the present incumbent, in April, 1903, to July 1, 1904, there has been inspected 24,788 barrels of low-grade oil, 22,948 barrels of the best grade, and 37,258 barrels of gasoline, making a total of 84,994 barrels inspected. Of this, 410 barrels were rejected.

There has been collected as inspection fees the sum of \$9,058.68, of which sum the amount of \$7,104.13 has been paid into the Territorial treasury and \$1,954.55 has been retained by and for deputies. There are twenty-seven deputies in the Territory. The average fees for the year are \$72.38.

The instruments used under the present method of inspection are the Charles J. Tagliabu open-cup fire tester and the Baumé hydrometer. Open-cup fire tester is used to make the flash test. The oil is placed in a glass cup, which is set in water over an alcohol lamp. A thermometer is suspended with the bulb in the oil. The temperature is raised and a small lighted taper passed over the oil at every two degrees rise of temperature, as indicated by the thermometer, until the oil flashes. The apparatus for liquids lighter than water consists of a hollow glass stem with a bulb blown in the middle, so as to give buoyancy, with another bulb, like a thermometer, to hold the weight, which is tested by pure water, which is marked zero. This method was devised by Baumé and is known as the Baumé hydrometer for liquids lighter than water.

Under the present law the oil is tested very carefully. All coal oil is tested by the flash test, and must show a flash of at least 120° temperature and must have a specific gravity of from 44° to 48° Baumé, inclusive, to be marked "Good." All oil having a lower or higher specific gravity or that flashes at less than 120° temperature shall be marked "Unsafe—rejected." The flash test shows the safety of the oil, while the gravity shows the quality. When the inspection was begun I found a part of the oil used in the Territory to be of a very poor grade; some flashed as low as 95°, and fully one-half of the tests I made in June and July, 1903, were marked "Unsafe—rejected." Under the present working of the law there has not been

any oil rejected since November, 1903. Since all rejected oil must be shipped out of the Territory, and a heavy penalty imposed for selling rejected oil, the oil companies are exercising great care in shipping oil into the Territory that will pass the necessary tests.

Few people appreciate the benefits of a good inspection law. Just prior to the enactment of the present law there were several serious accidents, and even some deaths, from the explosion of coal oil. So far as I can learn there have been no accidents of a serious character since the present law has been in effect.

Complaints of the law have been made by merchants who object to having to place a tag on all oil sold, while other merchants are pleased with the law, feeling that the placing of a tag on the oil sold is a source of protection to them.

Many of the complaints of poor oil are traceable to the neglect of lamps. Wicks which have been used for a great length of time become clogged and can not give a good light. In cold weather the wicks should be changed at least every four weeks and the burners kept scrupulously clean. If this is neglected, the wicks become so clogged that enough oil can not be lifted by them to give a good light.

The present law seems to be giving the people of the Territory a better grade of oil than they have ever had before, and as the public becomes more familiar with the law and its benefits it becomes much more pleasing to them. There are some details in which it might be improved, but it is in a great measure accomplishing the purpose for which it was enacted—i. e., to give the people of Oklahoma the best quality of oil possible to be procured for them.

#### TERRITORIAL GAME AND FISIL.

[J. C. Clark, game and fish warden.]

In collecting data for my report as Territorial game and fish warden I have found that it will be impossible to give strictly accurate figures as to the number of prosecutions, amount of fines collected, and value of game confiscated, for the reason that in but few instances have county wardens kept detailed memoranda, and several have made no reply to my request for a report.

From the reports I have been able to obtain I have compiled the following totals:

Number of prosecutions.....	41
Amount of fines imposed.....	\$1, 463. 25
Value of game confiscated.....	\$4, 365. 00
Number of fish nets and quail nets destroyed, 7; value.....	\$90. 00

All sheriffs, constables, and police officers have authority to make arrests for violations of the game laws, and doubtless a considerable number of prosecutions have been made by such officers, reports of which I could not, of course, obtain, and which are not included in the foregoing report, which sets forth only arrests made and prosecutions conducted by myself and county and deputy wardens, so that the sum total of arrests made and fines imposed during the past year will doubtless considerably exceed the figures given above.

In some instances county attorneys have shown a disinclination to prosecute in game-law cases, and county and deputy wardens have been obliged to employ counsel, though most of the prosecuting attorneys have performed their duties well.

So far as observed the disposition of citizens of the Territory has been toward an observance of the laws, and the larger part of the arrests and prosecutions have been of nonresident parties employed by commission houses in other States, who annually invade the Territory slaughtering and buying game of all descriptions, and shipping the same to their employers in St. Louis, Kansas City, Chicago, and Galveston. One notable capture consisted of a ship-



ment of 16,000 head of quail and prairie chicken consigned to a St. Louis commission house. There have been but few prosecutions for selling or exposing for sale game within the Territory, and there appears to be a general observance on the part of residents of the Territory of the laws defining the open and closed seasons.

The laws regarding game and fish in Oklahoma need entire revision. The present laws, while containing many excellent features, are the result of two separate legislative enactments, and in endeavoring to enforce them I find many conflicting sections, making it extremely difficult to determine exactly what the laws are in many instances. Chapter 15 of the session laws of 1903 repeals all acts and parts of acts in conflict therewith, and apparently reenacts portions of the existing laws, but leaves the question as to how much of the old law is repealed and how much is still in force, a matter of serious difficulty of determination. This fact has resulted in confusion on the part of judges and juries, and in several instances has defeated a conviction where the evidence showed conclusively that a violation of the law had occurred. These conditions can only be remedied by the enactment of an entirely new law, which will definitely repeal all existing statutes on the subject and contain every desirable feature necessary to the proper preservation of our game and fish as well as song birds. Owing to the fact of the conflicting provisions of the present law, many magistrates have failed to include in the fine any provision for either the Territorial or county wardens, and in but few instances have the officers received any portion of the fines imposed.

#### GRAIN INSPECTION.

[A. H. Jackman, inspector.]

The total number of cars of grain inspected during the year was 4,508, which, at 35 cents per car, amounts to \$1,577.80, or the amount expressed in bushels would be over four and one-half millions. This is a very remarkable showing when one considers that the inspection is optional with the owner of the grain.

This department is conducted without the expenditure of a single cent of the Territory's money. The entire expense must be met from the revenue derived by the inspection fees, and as the inspection is optional the expenditure for maintaining the department is a voluntary one, and it must therefore be of great value or it could not exist. The force now employed by the department consists of a chief inspector and four deputies. The deputies make daily report to and are directly under the jurisdiction of the chief inspector, who makes his reports semiannually to the grain commission, this commission being the secretary of the Territory, Hon. William Grimes; attorney-general, Hon. P. C. Simons, and Territorial auditor, Hon. L. W. Baxter. The commission, acting in accordance with the statutes, have adopted the following rules:

**RULE 1.** The chief inspector shall be authorized to purchase all necessary tools and appliances for inspection of grain; also furniture and office fixtures and other supplies needed.

**RULE 2.** He shall also be authorized to employ all help, clerical and otherwise, that shall be necessary to carry out the intent of the inspection law.

**RULE 3.** The inspector is directed to inspect all scales at warehouses as often as, in his judgment, it becomes necessary, and the fees for the inspection of each scale shall be \$1. to be paid by the warehouseman at the time of inspection.

**RULE 4.** The fee for inspection of cars shall be 35 cents for each car, and shall be collected by the inspector, who shall keep account of same and make full reports to the commission semiannually, June 30 and December 31 of each year, and at any additional times the board may require it.

**RULE 5.** The inspector may select points at which grain in cars in transit can be inspected, and appoint inspectors therefor.

**RULE 6.** The inspector may employ inspectors at points for inspection in cars on commission, in no case paying more than 20 cents per car.

## BOARD OF RAILWAY ASSESSORS.

At the annual meeting of the board of railway assessors, which is composed of the governor, secretary of the Territory, and the auditor, the various railroad companies were assessed as follows:

	Per mile.
Atchison, Topeka and Santa Fe, main line.....	\$5, 600
Kiowa division.....	3, 700
Tonkawa division.....	3, 000
Hutchinson and Southern.....	3, 000
Eastern Oklahoma—	
Guthrie branch.....	3, 500
Newkirk branch.....	2, 700
Shawnee branch.....	2, 500
Shawnee branch (not operated).....	2, 000
Cushing branch.....	2, 500
Seward branch.....	3, 000
St. Louis and San Francisco:	
Texas and Oklahoma, main line.....	5, 000
Blackwell branch.....	3, 800
Oklahoma City and Western—	
Oklahoma City to Lawton.....	3, 000
From Lawton to Texas line.....	2, 600
Blackwell, Enid and Southwestern—	
To Choctaw Northern crossing.....	2, 700
From crossing to Texas line.....	2, 300
Choctaw, Oklahoma and Western (completed).....	2, 300
Choctaw, Oklahoma and Western (grade).....	400
Arkansas Valley and Western—	
From Eastern Oklahoma line to Enid.....	2, 500
From Enid to Avard.....	2, 300
Chicago, Rock Island and Pacific, main line.....	5, 400
Billings branch.....	3, 400
Enid and Anadarko line.....	3, 500
Guthrie branch.....	3, 000
Mangum line.....	3, 800
El Paso line.....	3, 000
Faxon line.....	2, 500
Choctaw, Oklahoma and Gulf, main line, to Geary.....	5, 200
From Geary to Texas line.....	3, 500
Tecumseh branch.....	3, 000
Choctaw Northern.....	3, 700
Side tracks on all railroads.....	2, 000
Kansas, Mexico and Orient, main line.....	3, 000
Grade.....	400
Ungraded right of way.....	100
Missouri, Kansas and Oklahoma, main line.....	2, 500
Wybark branch.....	2, 500
Guthrie branch.....	2, 500
Texas branch (completed).....	2, 500
Texas branch (grade).....	400
Fort Smith and Western, main line.....	2, 800
St. Louis, El Reno and Western, main line.....	2, 500
Denver, Enid and Gulf, main line.....	2, 700

The rolling stock of the Santa Fe, Rock Island, Choctaw, and Frisco companies was assessed as follows:

Locomotives.....	\$3, 000
Passenger cars.....	2, 000
Tourist and emigrant cars.....	2, 000
Mail, baggage, and express cars.....	1, 500
Refrigerator and fruit cars.....	210

House cars .....	\$175
Cattle cars .....	175
Platform cars .....	130
Cabooses .....	300
Hand cars .....	12
Push cars .....	10
Standard Pullman palace cars.....	6,000
Coal cars.....	150

On the Denver, Enid and Gulf; Fort Smith and Western; Missouri, Katy and Oklahoma; Kansas City, Mexico and Orient, and St. Louis, El Reno and Western, as follows:

Locomotives .....	\$1,800
Passenger cars .....	1,200
Tourist and emigrant cars.....	2,000
Mail, baggage, and express cars.....	900
Refrigerator and fruit cars.....	210
House cars .....	175
Cattle cars .....	175
Platform cars .....	130
Cabooses .....	200
Hand cars .....	12
Push cars .....	10
Standard Pullman palace cars.....	6,000
Coal cars .....	150

Tools, materials, and other personal property was assessed as returned by the companies.

All railroad telegraph wires were assessed at \$52 for the poles and first wire and \$12 for each additional wire.

All section houses and stock yards were assessed as returned.

All railroad office furniture, switch boards, instruments, supplies, batteries, buildings, etc., were assessed as returned.

The property of the Western Union Telegraph Company, the Postal Telegraph Company, and the American District Telegraph Company was assessed as follows: \$52 for the poles and first wire and \$12 for each additional wire. All office furniture, switch boards, instruments, tools, batteries, buildings, etc., were assessed as returned.

The Missouri and Kansas Telephone Company was assessed at \$30 per mile for the poles and first wire and \$5 for each additional wire.

The Central Oklahoma, Consolidated, Guthrie, Home Enterprise, Kingfisher, Mangum, Norman, Oklahoma and Kansas, Perkins, Pioneer, Shawnee, Topeka and El Reno telephone companies were assessed at \$25 per mile for the poles and first wire and \$5 for each additional wire.

The Blaine County, Custer City, Frances Western, Geary, D. C. Hanel, Long Distance, Marshall, W. W. Oder, Purcell and Lexington, C. C. Rhyne, S. & S. Temple, Texas, Washita Valley, Western Oklahoma, and C. B. Wilson telephone companies were assessed at \$20 per mile for the poles and first wire and \$5 for each additional wire.

All other companies were assessed at \$15 per mile for the poles and first wire and \$5 per mile for each additional wire.

All office furniture, switch boards, tools, instruments, batteries, buildings, etc., were assessed as returned by the companies.



*Assessments of railroad property for the year 1904 as fixed by the Territorial board of railroad assessors for Oklahoma.*

ATCHISON, TOPEKA, AND SANTA FE RAILWAY COMPANY.

County.	Main track.		Side track.		Valuation of build-ings, etc.	Total valuation.
	Miles.	Valuation.	Miles.	Valuation.		
Cleveland .....	21.63	\$148,447	3.58	\$7,160	\$1,545	\$157,152
Day .....	3.78	15,800				15,800
Grant .....	36.88	122,183	2.03	4,060	1,250	127,493
Kay .....	89.16	374,244	19.96	39,920	5,790	400,054
Lincoln .....	37.38	117,934	7.07	14,140	3,775	135,849
Logan .....	65.55	357,183	13.33	26,760	16,625	400,568
Noble .....	37.25	255,647	7.24	14,480	3,910	274,037
Oklahoma .....	25.41	174,389	7.17	14,340	15,655	204,384
Pawnee .....	66.24	182,872	11.65	17,460	4,570	204,920
Payne .....	71.30	280,558	10.71	21,420	5,565	307,543
Pottawatomie .....	43.73	104,242	9.11	18,220	11,695	134,157
Woods .....	46.80	195,624	3.41	16,820	1,545	203,989
Woodward .....	65.72	274,710	7.81	15,620	6,955	297,285
Total .....	610.83	2,604,233	103.12	260,400	78,880	2,883,531

CHICAGO, ROCK ISLAND AND PACIFIC RAILWAY COMPANY.

Grant .....	30.26	\$190,154	4.57	\$9,140	\$3,200	\$202,494
Garfield .....	66.22	324,112	7.91	17,020	9,140	350,272
Noble .....	2.70	10,047	.70	1,440	1,105	12,552
Kingfisher .....	46.51	247,776	6.21	12,420	6,110	266,306
Canadian .....	25.98	163,258	9.65	19,300	3,165	185,723
Woods .....	24.68	94,253	.90	1,800	1,710	97,763
Blaine .....	31.85	121,635	3.10	6,200	2,675	130,510
Caddo .....	92.98	292,089	8.75	17,500	8,015	308,806
Kiowa .....	41.94	182,816	2.88	5,760	4,625	193,201
Greer .....	12.26	53,441	1.95	3,900	2,550	59,891
Beaver .....	55.57	186,104	4.65	9,300	4,835	200,239
Total .....	512.00	2,241,704	60.95	121,900	54,565	2,418,169

CHOCTAW NORTHERN RAILWAY COMPANY.

Woods .....	81.01	\$338,135	8.20	\$16,400	\$8,940	\$363,475
Blaine .....	40.23	167,920	4.10	8,200	3,460	179,580
Canadian .....	.35	1,461	.44	880		2,341
Total .....	121.59	507,516	12.74	25,480	12,400	545,396

ST. LOUIS AND SAN FRANCISCO RAILWAY COMPANY.

Blaine .....	32.34	\$100,066	2.86	\$5,720	\$1,700	\$107,486
Comanche .....	70.86	237,985	6.70	13,400	7,770	259,156
Custer .....	34.70	103,858	4.35	8,700	2,380	114,938
Canadian .....	6.92	25,556	.56	1,120	965	27,641
Caddo .....	21.29	78,622	1.11	2,222	2,303	83,147
Dewey .....	2.48	9,423	1.00	2,000	150	11,573
Garfield .....	76.04	247,409	7.78	15,560	7,725	270,694
Greer .....	41.34	136,132	1.09	2,180	945	139,257
Grant .....	14.52	49,267	1.84	3,680	3,080	56,027
Kay .....	29.48	120,432	2.89	5,780	2,815	129,027
Kiowa .....	60.03	184,292	7.86	15,720	6,705	206,717
Lincoln .....	63.46	276,667	5.94	11,880	7,792	296,335
Logan .....	17.92	53,634	3.99	7,980	2,990	64,604
Noble .....	32.88	104,985	6.22	12,440	3,150	120,575
Oklahoma .....	41.81	218,405	8.51	17,020	10,640	246,065
Pawnee .....	36.30	115,905	6.13	12,260	3,115	131,291
Washita .....	25.86	77,400	6.10	12,200	3,855	93,455
Woods .....	56.22	173,607	.77	1,540	625	175,772
Total .....	664.45	2,313,445	75.70	151,500	69,705	2,534,650

FORT SMITH AND WESTERN RAILWAY COMPANY.

Lincoln .....	42.72	\$121,620.63	2.57	\$5,184.00	\$1,587.50	\$128,392.13
Logan .....	18.81	53,437.56	1.67	3,356.00	250.00	57,043.56
Total .....	61.53	175,058.19	4.24	8,540.00	1,837.50	185,435.69

*Assessments of railroad property for the year 1904, etc.—Continued.*

## KANSAS CITY, MEXICO AND ORIENT RAILWAY COMPANY.

County.	Main track.		Side track.		Grade miles.	Valuation.	Valuation of build-ings, etc.	Total valuation.
	Miles.	Valuation.	Miles.	Valuation.				
Woods.....	58.07	\$184,943	7.07	\$14,140	16.83	\$6,732	\$1,800	\$207,615
Blaine.....					30.43	12,172		12,172
Washita.....					67.20	26,880		26,880
Kiowa.....					49.45	19,780		19,780
Greer.....					72.35	28,940		28,940
Dewey (ungraded right of way).....					16.23	1,623		1,623
Custer (ungraded right of way).....					30.06	3,006		3,006
Total.....	58.07	184,193	7.07	14,140	282.55	94,504	1,800	300,016

## CHOCTAW, OKLAHOMA AND GULF RAILWAY COMPANY.

County.	Main track.		Side track.		Valuation of build-ings, etc.	Total valuation.
	Miles.	Valuation.	Miles.	Valuation.		
Greer.....	21.25	\$93,309	2.23	\$4,460	\$1,800	\$99,569
Roger Mills.....	21.36	93,792	6.68	13,360	5,770	112,922
Washita.....	13.81	60,640	1.80	3,600	1,975	66,215
Custer.....	35.68	156,671	4.65	9,300	4,390	170,361
Caddo.....	13.65	59,937	1.24	2,480	2,150	64,567
Blaine.....	8.98	40,955	1.08	2,160	1,800	44,915
Canadian.....	39.17	239,055	6.53	13,060	6,075	258,190
Oklahoma.....	31.15	190,108	11.80	23,600	8,275	221,983
Lincoln.....	.78	4,760				4,760
Pottawatomie.....	51.96	245,012	17.75	35,500	45,375	325,887
Total.....	237.79	1,184,239	53.76	107,520	77,610	1,369,369

## DENVER, ENID AND GULF RAILWAY COMPANY.

Garfield.....	26.83	\$78,536.51	2.63	\$5,260.00	\$1,195.00	\$84,991.51
Logan.....	28.85	84,449.43	2.70	5,400.00	1,455.00	91,304.43
Total.....	55.68	162,985.94	5.33	10,660.00	3,650.00	176,295.94

## MISSOURI, KANSAS AND OKLAHOMA RAILWAY COMPANY.

Payne.....	18.80	\$52,945	1.56	\$3,120	\$1,250	\$57,315
Lincoln.....	33.03	93,381	5.12	10,240	3,500	107,121
Pawnee.....	82.69	232,873	1.04	2,080	4,750	239,703
Logan.....	19.93	58,395	3.74	7,480	3,700	69,575
Pottawatomie.....	30.00	70,800	.47	940	500	72,240
Oklahoma.....	52.00	95,514	6.75	13,600	6,900	116,014
Total.....	236.45	603,908	18.68	37,460	20,400	661,768

## ST. LOUIS, EL RENO AND WESTERN RAILWAY COMPANY.

Logan.....	18.40	\$46,919	0.68	\$1,360	\$650	\$48,929
Oklahoma.....	1.41	3,595				3,595
Canadian.....	19.72	50,285				50,285
Total.....	39.53	100,799	.68	1,360	650	102,809

## TERRITORIAL BOARD OF EQUALIZATION.

Owing to the delay occasioned by the absence of the assessment of the Osage Nation, the board was obliged to defer its action in the matter of equalization until July 27, 1904.

It was found necessary to raise the assessment in seven counties and to decrease it in eight others, except in the matter of moneys and credits, which was undisturbed.

The changes made were as follows:

County.	Increase.	Decrease.
	<i>Per cent.</i>	<i>Per cent.</i>
Beaver .....	8	
Caddo .....		11
Canadian .....	5	
Cleveland .....	5	
Day .....		11
Grant .....	20	
Greer .....		10
Kay .....		5
Lincoln .....	5	
Logan .....		5
Noble .....		5
Oklahoma .....	8	
Payne .....		8
Washita .....		8
Woods .....	5	

The following levies for 1904 were made:

	Mills.
For general Territorial tax .....	0.003
For territorial university at Norman .....	.0004
For university equipment fund .....	.00034
For university preparatory school .....	.000175
For Territorial normal at Edmond .....	.00034
For Territorial normal at Edmond, building fund .....	.000275
For Territorial normal at Alva .....	.00034
For Territorial normal at Alva, building fund .....	.00025
For Territorial normal at Weatherford .....	.00018
For agricultural and mechanical college at Stillwater .....	.000175
For colored agricultural and normal university at Langston .....	.00015
For deaf and dumb .....	.000125
Total tax levy for 1904 .....	.005750

The tax levy has decreased again this year (from  $6\frac{1}{4}$  to  $5\frac{3}{4}$  mills), and in this connection it is interesting to note the difference in the annual levy of past years. Below is given a tabular statement for comparison:

*Table showing levies by years.*

[Mills on the dollar of assessed valuation.]

1891 .....	4.0	1898 .....	4.3
1892 .....	4.0	1899 .....	5.2
1893 .....	4.0	1900 .....	5.15
1894 .....	4.6	1901 .....	7.5
1895 .....	4.6	1902 .....	7.8
1896 .....	4.0	1903 .....	6.25
1897 .....	4.3	1904 .....	5.75



## BOARD FOR LEASING SCHOOL LANDS.

[Fred L. Wenner, secretary.]

Oklahoma was the first Territory to secure a revenue from her school lands. Other Territories allowed the land to lie idle or to be occupied by squatters who pastured out the grass, cultivated some of the more fertile spots, and devastated the timber, no revenue whatever accruing to the Territory, and the lands often being badly damaged and depreciated in value by such occupation. In 1891, the governor of Oklahoma, by special act of Congress, was granted authority to lease the lands reserved to the Territory for school purposes and the net revenue above all expenses of the administration of this department of business, protection of lands, securing of indemnity lands, etc., has been over \$2,000,000. During the past year alone the receipts of the rental of public school and other reserved Territory lands were \$361,987.72, or an average of a little less than \$1,000 per day. Of this amount \$244,455.56 was received from the lands reserved for common school purposes and went into the common school fund to be distributed per capita to the school districts throughout the Territory, \$55,159.26 was received from the lands reserved for the benefit of the higher institutions of learning, \$55,641.10 from the lands reserved for public buildings, and \$6,731.80 from special lands in Greer County. The total acreage of lands reserved by different acts of Congress and turned over to the Territory to become the property of the future State, and the revenue therefrom, in the meantime to be received by the Territory, was 2,050,876 acres, practically all of which is under lease. The bulk of this land is sections 16 and 36, reserved by Congress in every township in the Territory for the benefit of the common school fund and indemnity lands secured in lieu of such sections lost by allotment or other purposes, but by special acts of Congress in portions of the Territory section 13 was reserved for the benefit of the higher institutions of learning and 33 for public buildings, and in Greer County these two sections were set aside for such purposes as the legislature of the future State of Oklahoma might decide.

The reserved lands of the Territory divided in their proper classification are in area as follows:

	Acres.
Common school lands.....	1, 199, 151. 72
Common school indemnity lands.....	214, 651. 51
College lands.....	279, 092. 23
Public building lands.....	273, 446. 39
Greer County, section 13, lands.....	42, 914. 88
Greer County, section 33, lands.....	41, 619. 21
Total .....	2, 050, 875. 94

The net receipts of the different funds to date are as follows:

Common school fund .....	\$1, 434, 429. 44
Common school indemnity fund.....	77, 629. 16
College fund.....	303, 339. 53
Public building fund.....	303, 279. 26
Greer County, section 13, fund.....	12, 256. 80
Greer County, section 33, fund.....	11, 500. 19
Total .....	2, 141, 434. 38

All of the funds derived from the leasing of these lands are turned over to the Territorial treasurer promptly on the 1st of each month with the exception that the receipts of sections 13 and 33 are turned over as often as the sum of \$500 is on hand, as provided by law. During the interim between their collection and their transfer to the Territorial treasurer these funds are deposited in national banks in the city of Guthrie, the banks being required to deposit with the secretary of the board Territorial warrants, school bonds, or other approved securities, always in excess of the amount of funds on deposit with them. After going to the Territorial treasury the money is deposited in the regular designated Territorial depositories, where it is secured by the deposit of Territorial warrants or other securities, or properly approved fidelity bond, and draws 3 per cent interest on monthly balances. Semiannually the common school and college funds are distributed, the common school fund being distributed per capita of school population among the various school districts of the Territory, with the exception of 15 per cent of the receipts from indemnity lands, which, under the Territorial law, goes direct to the district from which it is received. The college fund is divided equally among the seven higher institutions of learning in the Territory. The public building and the Greer County sections 13 and 33 funds remain permanently in the hands of the treasurer.

Doing business with nearly 8,000 lessees, collecting rentals averaging \$1,000 per day, looking after the protection of the lands, preventing timber depredations, settling and adjusting the many difficulties and controversies that come up almost daily, classifying and appraising the lands and issuing new leases on the same every three years, make this one of the largest and most important departments of Territorial business.

Under an act of Congress this work is delegated to a board composed of the governor, secretary of the Territory, and superintendent of public instruction. They elect a secretary, who administers the department under a code of rules provided by them, the same being based upon the original rules drawn by the Secretary of the Interior and since modified by acts of Congress and of the Territorial legislature. The matters not covered by rules must go direct to the board, as do all matters of appeal from the secretary, requiring them to hold many sessions, often as a trial court. So heavy has this work become that it imposes arduous duties upon each member of the board that are often burdensome and for which they receive no compensation whatever. New questions are continually arising, and as the leases grow more valuable there is often controversy over the ownership, which must be settled by a trial before the board.

While the board does not recognize any legal homestead interest in these leases, it has felt that the wife, as a matter of justice and right, has an interest there, and the rules now require her signature to the transfer of a lease. The rules, as now enforced, require all signatures to leases and transfers to be acknowledged before a notary public; provide that all lessees who are residents of the Territory may secure a permit to rent out all or a portion of their land for any good reason; require permits to clear land for cultivation; permit the assigning of a lease for security purposes by a special form of

mortgage; give the lessees the right of renewal of their leases at the expiration of the same for another term of three years at the appraised rental without competitive bidding, and are generally satisfactory, providing adequate protection to both the school fund and the rights of the lessees.

In appraising lands for the renewal of leases great care is now being exercised to secure to the school fund proper compensation for the use of the land as well as to be fair and just to the lessee. An appraiser visits the land, goes carefully over it, takes a complete description, giving the character of the soil and all the natural conditions, kinds of grass, timber, location of water, the amount of land that can be profitably farmed, distance from the market, kind of roads, etc., and a complete plat of the land is also made. From this plat and description and from the reports obtained of the selling value of deeded land in that vicinity the cash value of the particular piece of school land as raw land, without the improvements, is fixed and the rental put at an average of 4 per cent of this cash value. The lessee who is occupying the land as a home and is improving it as such in good faith and caring for it properly has his rental fixed at a little less than 4 per cent. The lessee who does not live on the land is required to pay a little more than 4 per cent.

The department has been put to much trouble and expense in protecting the timber and the mineral deposits on school lands. Lessees are not allowed to cut timber without a permit, and these permits are granted only when it is shown that it is necessary to cut the timber in order to put the land in cultivation. Non-lessees who cut timber are being prosecuted under the Federal statutes, and under a recent ruling of the Interior Department that the mineral laws of the United States do not apply to school lands in the Kiowa, Comanche, and Apache Reservation, action is being brought in the courts to eject miners who have been trespassing upon these lands. One or more special agents are kept busy riding over the country watching the valuable timber upon school land. It is estimated that there is between \$15,000 and \$20,000 worth of walnut timber upon the school lands of the Territory, and it is only by constant vigilance that parties are kept from stealing this timber.

In view of the fact that this valuable timber has mostly reached maturity and much of it is deteriorating in value because of decay and damage by storms and fire, and of the great expense the Department is put to to protect it from fires and timber thieves, we believe that it would be for the best interests of the school fund for the Territory to be authorized by special act of Congress to sell this timber and cover the money into the permanent school fund.

As valuable oil and gas finds have been made on lands adjacent to school lands in several counties of the Territory, authority should also be granted the Territory to lease the reserved lands for oil and gas, propositions having been submitted to the Department in the past thirty days by reliable oil companies which would greatly augment the revenues from these lands.

Under an act of the Territorial legislature extending the right of eminent domain to the school lands, railway companies and other corporations have paid \$6,699.33 for lands condemned for right of



way and other purposes during the year, the total amount received by the Territorial treasurer up to this date from such sources being \$19,913.68. In a number of cases railways have not yet made settlement for land taken, and in others the awards are so small that it is deemed best not to accept same but appeal to the courts.

Following are given tables showing receipts and expenditures of the Department the past year; total receipts and expenditures of each fund to date; net receipts for each year from the beginning; apportionment of common school fund, by counties, the past year; amount of rental assessed in each county for present year; amount paid by each county the past year, and other valuable statistical information relating to the lands and the work of the Department:

*Receipts and expenditures for the year ending June 30, 1904.*

On hand June 30, 1903		\$4, 655. 57
Received from June 30, 1903, to June 30, 1904		361, 987. 72
Total		366, 643. 29
Expenses for the year	\$26, 196. 72	
To the Territorial treasurer	338, 954. 03	
Returned to applicants	11. 00	
Balance on hand	1, 481. 54	
Total		366, 643. 29

*Receipts and expenditures for each fund for the year ending June 30, 1904.*

Common school:		
Cash received		\$214, 564. 79
Expenses	\$15, 401. 31	
Returned to applicants	9. 00	
Net receipts	199, 154. 48	
		214, 564. 79
College:		
Cash received		55, 159. 26
Expenses	\$3, 629. 20	
Net receipts	51, 530. 06	
		55, 159. 26
Public buildings:		
Cash received		55, 641. 10
Expenses	\$3, 590. 20	
Returned to applicants	2. 00	
Net receipts	52, 048. 90	
		55, 641. 10
Common school indemnity:		
Cash received		29, 890. 77
Expenses	\$3, 064. 33	
Net receipts	26, 826. 44	
		29, 890. 77
Greer County:		
Section 13—		
Cash received		3, 404. 45
Expenses	\$255. 84	
Net receipts	3, 148. 61	
		3, 404. 45
Section 33—		
Cash received		3, 327. 35
Expenses	\$255. 84	
Net receipts	3, 071. 51	
		3, 327. 35

*Receipts by funds and counties, year ending June 30, 1904.*

County.	Common school.	Common school indemnity.	College.	Public building.	Grand total.
Beaver .....	\$7,196.95	\$871.70	\$26.25	\$22.50	\$8,117.40
Blaine .....	7,027.21		5.00	605.00	7,637.21
Caddo .....	10,252.60	1,208.40	5,722.40	4,616.50	21,799.90
Canadian .....	11,183.75	199.50	104.00	223.00	11,710.25
Cleveland .....	5,684.88				5,684.88
Comanche .....	12,402.19	3,909.70	7,562.64	8,349.48	32,224.01
Custer .....	4,846.66	473.63	369.00	260.00	5,949.29
Day .....	2,516.14	2.00			2,518.14
Dewey .....	3,550.21	292.80			3,843.01
Garfield .....	16,661.96		7,713.88	6,791.38	31,166.72
Grant .....	13,874.34		6,080.20	6,071.99	26,026.53
Greer .....	4,371.13	1,217.15	a 3,404.45	a 3,327.35	12,320.08
Kay .....	14,909.89		6,344.75	7,525.82	28,780.46
Kingfisher .....	11,865.50				11,865.50
Kiowa .....	4,840.40	1,893.60	3,062.50	3,918.10	13,714.60
Lincoln .....	8,935.03	13,097.92			22,032.95
Logan .....	8,042.86				8,042.86
Noble .....	6,985.00		3,009.79	2,890.27	12,885.06
Oklahoma .....	8,176.72	3,881.82			12,058.54
Pawnee .....	4,762.99		1,166.13	1,334.65	7,263.77
Payne .....	7,098.85		909.87	868.56	8,877.28
Pottawatomie .....	5,939.13	1,788.30			7,727.43
Roger Mills .....	2,552.05	175.75			2,727.80
Washita .....	5,178.99		524.00		5,702.99
Woods .....	18,018.04		8,696.90	8,273.08	34,988.02
Woodward .....	7,691.32	878.50	3,862.45	3,890.77	16,323.04
Total .....	214,564.79	29,890.77	58,563.71	58,968.45	361,987.72

a Greer County, sections 13 and 33, kept in separate funds.

*Total receipts and expenditures of each fund to June 30, 1904.*

## Common school:

Cash received .....	\$1,552,191.18
Expenses .....	\$111,982.18
Money returned to applicants .....	5,779.56
Net receipts .....	1,434,429.44
	1,552,191.18

## Colleges:

Cash received .....	326,283.55
Expenses .....	\$21,196.86
Money returned to applicants .....	1,747.16
Net receipts .....	303,339.53
	326,283.55

## Public buildings:

Cash received .....	324,606.85
Expenses .....	\$21,149.50
Money returned to applicants .....	1,178.09
Net receipts .....	302,279.26
	324,606.85

## Common school indemnity:

Cash received .....	83,788.86
Expenses .....	\$6,157.20
Money returned to applicants .....	2.50
Net receipts .....	77,629.16
	83,788.86

## Greer County:

## Section 13—

Cash received .....	13,526.75
Expenses .....	\$1,253.45
Money returned to applicants .....	16.50
Net receipts .....	12,256.80
	13,526.75

## Greer County—Continued.

## Section 33—

Cash received.....		\$12, 753. 64
Expenses .....	\$1, 253. 45	
Net receipts .....	11, 500. 19	
		12, 753. 64

## Grand total of all funds:

Cash receipts.....		2, 313, 150. 83
Expenses .....	\$162, 992. 64	
Money returned to applicants.....	8, 723. 81	
Net receipts.....	2, 141, 434. 38	
		2, 313, 150. 83

*Net proceeds from leasing lands, fiscal years ending June 30, 1891-1904.*

1891.....	\$4, 536. 82	1899.....	\$133, 047. 19
1892.....	21, 346. 13	1900.....	177, 190. 24
1893.....	19, 164. 67	1901.....	213, 303. 67
1894.....	45, 989. 98	1902.....	435, 915. 85
1895.....	88, 627. 97	1903.....	322, 880. 54
1896.....	71, 740. 68	1904.....	335, 780. 00
1897.....	98, 467. 83		
1898.....	173, 442. 83	Total.....	2, 141, 434. 38

## Common school apportionment, 1904.

[\$1.15 per capita of school population.]

County.	Scholastic population.	January, 1904, distribution.	July, 1904, distribution.	Total.
Beaver .....	1, 633	\$1, 763. 64	\$114. 31	\$1, 877. 95
Blaine .....	5, 161	5, 573. 88	361. 27	5, 935. 15
Caddo .....	6, 214	6, 711. 12	434. 98	7, 146. 10
Canadian .....	6, 027	6, 509. 16	421. 89	6, 931. 05
Cleveland .....	6, 914	7, 467. 12	483. 98	7, 951. 10
Comanche .....	9, 508	10, 268. 64	665. 56	10, 934. 20
Custer .....	5, 644	6, 095. 52	395. 08	6, 490. 60
Day .....	2, 288	2, 471. 04	160. 16	2, 631. 20
Dewey .....	4, 770	5, 151. 60	333. 90	5, 485. 50
Garfield .....	8, 304	8, 968. 32	581. 28	9, 549. 60
Grant .....	6, 292	6, 795. 36	440. 44	7, 235. 80
Greer .....	11, 912	12, 864. 96	833. 84	13, 698. 80
Kay .....	7, 575	8, 181. 00	530. 25	8, 711. 25
Kingfisher .....	6, 749	7, 288. 92	472. 43	7, 761. 35
Kiowa .....	5, 844	6, 311. 52	409. 08	6, 720. 60
Lincoln .....	11, 511	12, 431. 88	805. 77	13, 237. 65
Logan .....	8, 538	9, 221. 04	597. 66	9, 818. 70
Noble .....	3, 567	3, 852. 36	249. 69	4, 102. 05
Oklahoma .....	12, 081	13, 047. 48	845. 67	13, 893. 15
Pawnee .....	3, 394	4, 313. 52	279. 58	4, 593. 10
Payne .....	8, 227	8, 885. 16	575. 89	9, 461. 05
Pottawatomie .....	12, 681	13, 695. 48	887. 67	14, 583. 15
Roger Mills .....	5, 120	5, 529. 60	358. 40	5, 888. 00
Washita .....	7, 541	8, 144. 28	527. 87	8, 672. 15
Woods .....	15, 397	16, 628. 76	1, 077. 79	17, 706. 55
Woodward .....	7, 967	8, 604. 36	557. 69	9, 162. 05
Total .....	191, 459	206, 775. 72	13, 402. 13	220, 177. 85



*Appraisement, 1904.*

County.	Common school and common school indemnity.	College, section 13, and indemnity.	Public building, section 33, and indemnity.	Total.	Average rental per quarter section.
Beaver .....	\$9,776.15	\$120.00	\$82.50	\$9,978.65	\$7.08
Blaine .....	9,956.00	---	510.00	10,466.00	47.80
Caddo .....	10,881.00	5,752.50	4,434.75	21,068.25	34.00
Canadian .....	11,950.00	100.00	455.00	12,505.00	58.00
Cleveland .....	6,291.00	---	---	6,291.00	60.00
Comanche .....	16,241.98	7,783.50	8,459.75	32,485.23	31.90
Custer .....	8,726.00	340.00	295.50	9,361.50	35.30
Day .....	4,085.00	---	---	4,085.00	16.90
Dewey .....	5,639.00	---	---	5,639.00	23.60
Garfield .....	18,372.00	11,215.00	9,740.00	39,327.00	83.50
Grant .....	17,415.00	9,736.00	8,975.00	36,126.00	75.26
Greer .....	11,285.00	5,238.90	4,652.00	21,175.90	19.86
Kay .....	16,245.00	8,050.00	9,915.00	34,210.00	108.30
Kingfisher .....	13,962.00	---	---	13,962.00	70.80
Kiowa .....	7,120.00	3,595.00	4,135.00	14,850.00	20.90
Lincoln .....	28,374.00	---	---	28,374.00	45.11
Logan .....	8,538.50	---	---	8,538.50	52.06
Noble .....	7,350.00	2,230.00	3,020.00	12,600.00	66.00
Oklahoma .....	16,530.50	---	---	16,530.50	51.90
Pawnee .....	5,182.00	1,698.50	1,902.00	8,782.50	49.56
Payne .....	9,024.00	1,281.00	818.00	11,123.00	53.22
Pottawatomie .....	7,961.00	---	---	7,961.00	48.25
Roger Mills .....	5,281.00	---	---	5,281.00	18.80
Washita .....	10,200.80	545.00	---	10,745.80	44.00
Woods .....	22,610.25	15,404.00	13,333.50	51,347.75	42.29
Woodward .....	12,382.60	5,317.00	4,743.00	22,442.60	13.60
Total .....	301,379.78	78,406.40	75,471.00	455,257.18	-----

Average rental per quarter section for the Territory, \$45.32.

*Amount of distribution each year.*

Year ending June 30—	Number of children.	Amount per capita.	Total amount.
1892 .....	31,920	\$0.83	\$21,662.60
1893 .....	43,939	.56	20,416.86
1894 .....	74,384	.72	45,858.48
1895 .....	77,770	.69	54,665.65
1896 .....	88,093	.62	53,591.43
1897 .....	88,745	.86	76,853.00
1898 .....	90,585	1.34	121,383.90
1899 .....	101,474	.97	98,428.78
1900 .....	114,737	1.13	129,652.81
1901 .....	128,797	1.20	150,201.92
1902 .....	145,131	1.84	266,638.74
1903 .....	178,964	1.02	181,828.88
1904 .....	191,459	1.15	220,177.85

*Notes on hand.*

	Number.	Amount.
Common school fund .....	10,225	\$602,437.31
College .....	2,452	166,332.72
Public building .....	2,347	154,985.18
Common school indemnity .....	1,889	69,824.90
Greer County:		
Section 13 .....	258	13,630.35
Section 33 .....	221	11,241.50
Total .....	17,392	1,018,451.96

*Acreage of reserved lands, by counties.*

County.	Common school.	Common school indemnity.	College, section 13.	College indemnity in lieu of section 13.	Public building.	Public building indemnity in lieu of section 33.	Total.
Beaver .....	207,271.84	15,078.63	-----	2,560.00	-----	1,640.00	226,550.47
Blaine .....	32,172.42	-----	236.88	-----	1,988.95	640.00	35,038.25
Caddo .....	45,801.36	5,190.00	16,863.02	8,600.00	17,460.40	4,200.00	98,114.78
Canadian .....	31,254.55	640.00	640.00	-----	2,187.40	-----	34,721.95
Cleveland .....	16,752.58	-----	-----	-----	-----	-----	16,752.58
Comanche .....	62,978.59	18,630.63	25,034.87	12,800.00	27,559.48	15,640.00	162,643.57
Custer .....	34,560.00	4,480.00	1,920.00	-----	-----	1,440.00	42,400.00
Day .....	38,069.80	640.00	-----	-----	-----	-----	38,709.80
Dewey .....	33,639.20	4,720.00	-----	-----	-----	-----	38,359.20
Garfield .....	38,400.00	-----	19,200.00	-----	17,802.07	-----	75,402.07
Grant .....	38,400.00	-----	19,200.00	-----	19,215.95	-----	76,815.95
Greer .....	64,936.41	21,154.67	32,080.46	10,834.42	30,836.21	10,783.00	170,625.17
Kay .....	24,677.61	-----	11,693.43	-----	14,077.45	-----	50,448.49
Kingfisher .....	31,632.48	-----	-----	-----	-----	-----	31,632.48
Kiowa .....	40,120.78	15,077.67	18,824.20	10,080.00	17,280.02	12,320.00	113,702.67
Lincoln .....	32,515.72	68,160.00	-----	-----	-----	-----	100,675.72
Logan .....	26,230.00	-----	-----	-----	-----	-----	26,230.00
Noble .....	15,360.00	-----	7,680.00	-----	7,454.00	-----	30,494.00
Oklahoma .....	24,587.70	26,399.91	-----	-----	-----	-----	50,987.61
Pawnee .....	16,747.38	-----	5,511.00	-----	6,133.38	-----	28,391.76
Payne .....	26,811.76	-----	3,758.38	-----	2,852.37	-----	33,422.51
Pottawatomie .....	19,529.56	6,880.00	-----	-----	-----	-----	26,409.56
Roger Mills .....	41,728.27	3,380.00	-----	-----	-----	-----	45,088.27
Washita .....	36,120.02	-----	2,560.00	-----	-----	-----	38,680.02
Woods .....	97,993.48	-----	50,490.45	-----	46,092.92	-----	194,276.85
Woodward .....	121,160.21	24,240.00	61,440.00	-----	57,462.00	-----	264,302.21
Total .....	1,199,151.72	214,651.51	277,132.69	44,874.42	268,402.60	46,663.00	2,050,875.94

## TERRITORIAL BOARD OF HEALTH.

[Dr. E. E. Cowdrick, secretary.]

The office of secretary of the board of health is kept in touch with the public health of Oklahoma by monthly reports sent to the secretary by the superintendents of county health boards. Though this incurs an extra amount of work upon these officials, for which there is no remuneration, they cheerfully (in most cases) respond very promptly.

During the year ending June 30, 1904, there has been less contagion than at any time in the history of the Territory in the same length of time. There are a number of the northern counties that have not had a case of smallpox in eighteen months, and all the counties are nearer free from the disease than ever before. There have been reported some cases in Comanche and Kiowa counties, and upon investigation it would develop the fact of it being confined to the families who were exposed or possibly to some who would not observe the quarantine regulations.

At the present time Oklahoma City is having a mild epidemic of typhoid fever. Upon investigation as to the cause it was attributed to the improper sewer system and the rains that recently flooded certain portions of the city, backing up the sewers full of lavage and even filling up the streets to a depth of some feet.

Below are given the names of the superintendents of county boards of health:

County.	Superintendent.	Location.
Beaver .....	Dr. L. Munsell .....	Beaver.
Blaine .....	Dr. A. L. Edgington .....	Watonga.
Caddo .....	Dr. Chas. R. Hume .....	Anadarko.
Canadian .....	Dr. R. F. Koons .....	Elreno.
Cleveland .....	Dr. C. S. Bobo .....	Norman.
Comanche .....	Dr. W. N. Hitch (acting) .....	Lawton.
Custer .....	Dr. G. E. Fuller .....	Weatherford.
Day .....	Dr. O. C. Newman .....	Grand.
Dewey .....	Dr. A. C. Adams .....	Taloga.
Garfield .....	Dr. H. C. Bowers .....	Enid.
Grant .....	Dr. T. C. White .....	Lamont.
Greer .....	Dr. Geo. Border .....	Mangum.
Kay .....	Dr. A. L. Hazen .....	Newkirk.
Kingfisher .....	Dr. R. W. Brown .....	Kingfisher.
Kiowa .....	Dr. F. M. Bailey .....	Hobart.
Lincoln .....	Dr. J. H. Baugh .....	Meeker.
Logan .....	Dr. C. F. Cotteral .....	Guthrie.
Noble .....	Dr. F. F. Jones .....	Perry.
Oklahoma .....	Dr. W. H. Clutter .....	Oklahoma City.
Pawnee .....	Dr. G. H. Phillips .....	Pawnee.
Payne .....	Dr. D. F. Janeway .....	Stillwater.
Pottawatomie .....	Dr. Hunter Montgomery .....	Shawnee.
Roger Mills .....	Dr. M. H. Levi .....	Elk City.
Washita .....	Dr. A. H. Bungardt .....	Cordell.
Woods .....	Dr. L. L. Long .....	Alva.
Woodward .....	Dr. O. A. Pierson .....	Woodward.

At the present time the board of health has no constitution, by-laws, or rules other than the medical act for its government. When this board was organized it made rules to govern its actions, and by an opinion from the former attorney-general we conducted our affairs according to these rules until this opinion was reversed (eight months after) by him. Since that time the board has used the present law as far as it would reach and then stopped.

There have been 66 applicants for the examination to practice medicine according to the present law. There were a number who applied, but owing to the poor standing of the college from which they alleged to have received their degrees of M. D. they were not admitted to the examination. These are not included in the above number. There have been 40 per cent of all those applying for license who failed to reach the required grade in one or more of the branches used in the test, and were not issued a license. Many of them avail themselves of the opportunity to again take the examination, as the cost is nominal (\$5) and it takes only one day in time. Since the board is advised to charge only the fee stated in the law, there are larger classes and men and women of little education who apply for examination.

The board has never issued a license to any person granting them the right to practice midwifery. There have been 4 applicants for examination, but upon giving them a fair test they were found to be so ignorant in that branch of medicine that the board has refused to receive any more applications for examination.

There have been issued 35 embalmers' licenses during the year ending June 30, 1904. The licenses were issued after the applicants had given satisfactory evidence of a practical knowledge of the art of embalming and a knowledge of contagion and infection, which makes them very valuable assistants to the boards of health in pre-



venting the spread of the diseases that cause so much trouble when once allowed to get a start. The tests were given as are all the tests, viz, in writing, and are kept in my office as a record for future reference. There is no fee charged for conducting the examinations of applicants for embalmers' licenses. The president of the Territorial Embalmers' Association collects enough from the applicants to cover the expense of conducting the examination, etc., and turns it over to the board, taking its receipt for the same. It is necessary and important that these embalmers should be licensed, as they are a part of the health department when it comes to caring for the public health, and, again, the railroads in Oklahoma will not accept a body for shipment unless it has the number of a licensed embalmer attached. This is as it should be, for if this rule were not strictly adhered to we would soon be in a horrible condition from the shipping of infected bodies from one county to another, besides endangering the health in neighboring States.

The most work falling upon this office seems to come as complaints against doctors who drop (from no one seems to know where) into a town and begin to hustle for business without making any inquiry as to the medical laws. When written to, they either do not answer or move to some other town and do the same thing.

As will be seen by the attached law, the board's powers are very limited. We can only advise those who locate in Oklahoma to practice medicine that we have a law which requires a test before a license can be issued. Should the person refuse under some pretext or another to come before the board, we can only refer the matter to the county attorney of that county, with the request that he push the matter. Usually that is the last ever heard of that complaint. The next man who takes the matter up accuses the board of not doing its duty. There are some two or three county attorneys in Oklahoma who will take these matters up and push them. In all such cases we have been able to punish all violators. Woodward, Woods, Caddo, and Noble counties are examples where the board had the required assistance, and in each case the doctor was punished.

Since the act of 1893, creating a board of health, went into effect, there have been some 3,000 licenses issued, and about 25 per cent of this number did not come to the Territory, as they became registered by diploma, and did so because it was one of the few places in the United States that admitted physicians upon diploma. Some 405 of the 3,000 have moved out, died, or quit the practice of medicine to go into some other kind of business.

The schools represented in the Territory are allopathic, homeopathic, eclectic, and a few physiomedicalists. The allopathic has by far the largest number of practitioners in Oklahoma, possibly 75 per cent. Then comes the eclectics with 20 per cent, the homeopathics and physiomedicalists with a division of the remaining 5 per cent.

AN ACT repealing chapter eight of the statutes of Oklahoma, 1893, establishing a board of health, and for other purposes.

*Be it enacted by the legislative assembly of the Territory of Oklahoma:*

SECTION 1. There is hereby established a Territorial board of health, composed of three persons, residents of this Territory, regularly practicing and legally qualified physicians in good standing, to be appointed by the governor and approved by the council. The term of office of each member shall be two years, and one member shall be designated by the governor as superintendent,

who shall be ex officio secretary of the board. The board shall elect one of its members as president and the other as vice-president.

Sec. 2. The president, when present, and the vice-president when the president is absent, shall preside at the meeting of the board. The secretary shall keep a record of the proceedings of the board and of his own proceedings as superintendent of the board of health. The board of health shall hold meetings every three months, due notice of the time and place to be given by the secretary.

Sec. 3. It shall be the duty of the board of health to examine applicants and grant licenses to those found to be qualified and entitled to the same, to quarantine against outside territory known to be infected with contagious or infectious diseases, to condemn and destroy impure and diseased articles of food offered or exposed for sale in the Territory, and to act in conjunction with the county and municipal boards of health.

Sec. 4. The salary of the superintendent of the board of health shall be eight hundred dollars per annum, and he shall be allowed for records, supplies, printing, and traveling expenses actually and necessarily expended not to exceed five hundred dollars per annum, which shall be paid upon sworn itemized statements. The president and vice-president of the board shall receive no compensation except fees for examination of applicants for license to practice medicine and surgery, which shall be equally divided between them, and actual and necessary traveling expenses, not to exceed one hundred dollars each per annum.

Sec. 5. No person hereafter shall practice medicine or surgery in this Territory without first obtaining a license from the Territorial board of health. Application for license shall be made in writing, together with a fee of five dollars, accompanied by a proof of good moral character, and proof of ten years continuous practice, or proof of graduation from a reputable medical college. When the application has been inspected by the board and found to comply with the foregoing provisions, the board shall notify the applicant to appear for examination at a time and place designated in such notice. Examination shall be made in whole or in part in writing and be sufficiently strict to test applicant's qualifications to practice medicine. All members of the board shall be present and participate in such examination. It shall be the duty of the person holding such license to register in the office of the register of deeds, in a book kept for that purpose, in the county in which person resides or intends to practice. Provided, that an osteopath shall not be required to pass an examination in materia medica or therapeutics.

Sec. 6. Any person practicing or offering to practice medicine or surgery in any of their branches, without first having obtained a license from this board, shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be fined in any sum not less than fifty dollars nor more than one hundred dollars, or by imprisonment in the county jail for a period of not less than thirty days, nor more than six months, or by both such fine and imprisonment at the discretion of the court, and all costs incurred therein.

Sec. 7. The provisions of this act shall not affect the rights of persons now legally practicing medicine, osteopathy, or surgery in this Territory; nor shall it prohibit the application of domestic remedies by one member of a family to another thereof; nor administering of remedies by another in case of emergency, without compensation; nor shall it comply to any commissioned medical officer of the United States Army, Navy, or Marine Hospital Service in the discharge of his official duties; nor to any legal qualified dentist, when engaged exclusively in the practice of dentistry; nor to any physician or surgeon from another State or Territory who is a legal practitioner of medicine or surgery in the State or Territory in which he resides, when in actual consultation with a legal practitioner of this Territory, nor to any physician or surgeon residing on the border of a neighboring State or Territory and duly authorized under the law thereof to practice medicine or surgery therein, whose practice extends into the limits of this Territory: *Provided*, That such practitioner shall not open an office or appoint a place to meet patients or receive calls within the limits of this Territory; nor to any osteopath who shall pass examination in the subject of anatomy, physiology, obstetrics, and physical diagnosis in the same manner as required of other applicants before the Territorial board of health, and who has thereupon received a certificate from the board which, when filed with the register of deeds, as is required in the case of other certificates from the board, shall authorize the holder thereof to practice osteopathy in the Territory of Oklahoma, but shall not permit him to administer drugs nor to perform major surgery.



SEC. 8. The county boards of health shall consist of three persons: A legally qualified physician appointed by the Territorial superintendent, who shall be superintendent and secretary of the county board of health; the chairman of the county commissioners, who shall be president, and a legally qualified physician appointed by the board of county commissioners, who shall be vice-president. The superintendent of county boards of health shall have power to abolish nuisances that are dangerous to the public health, to isolate persons afflicted with dangerous or contagious diseases, and to do such other things with the approval of the board as may be deemed necessary for the preservation of the public health. Such superintendent shall be paid for expenses actually and necessarily contracted in the discharge of his duties, together with fees for duty performed: *Provided*, That the sum total of such expenses and fees shall not exceed one hundred dollars per annum. Such bills of expense and fees shall be filed with the county clerk and allowed by the board of county commissioners, as other bills are allowed by them: *Provided further*, That should an emergency exist on account of the prevalence of any dangerous epidemic, such county board of health may make such provisions for the isolation and care of the sick as may be required, by and with the consent and approval of the county commissioners.

SEC. 9. Chapter eight of the statutes of Oklahoma, 1893, together with all acts and parts of acts in conflict herewith are hereby repealed.

SEC. 10. This act shall take effect and be in force from and after its passage and approval.

Approved, March 12, 1903.

#### BOARD OF OSTEOPATHIC EXAMINERS.

[Dr. J. A. Price, secretary.]

The board of osteopathic examiners met in Guthrie July 7, 1903, and organized by electing J. M. Rouse, of Oklahoma City, president; J. W. Slade, of Guthrie, treasurer, and J. A. Price, of Perry, secretary.

There have been two regular and two called meetings of the board.

Thirty-nine certificates to practice osteopathy had been granted up to June 30, 1904.

Three hundred and ninety dollars have been collected in fees from applicants.

The secretary has been paid a salary of \$25 per year. Each member of the board has received \$10 per day and necessary expenses while the board was in session.

The science of osteopathy has made a rapid growth in the Territory. A little over four years ago there was but one representative of the school in Oklahoma.

The legislature of 1903 passed an act to regulate the practice of osteopathy and to provide for a Territorial board of osteopathic examiners and prescribing the powers and duties of said board and to license osteopaths to practice in this Territory and to punish persons violating the provisions of this act.

Section 7 of the above-mentioned act states that—

Practitioners of the science or system of treating diseases of the human body, commonly known as osteopathy, shall not be subject to the provisions of the act entitled "An act creating a board of health and regulating the practice of medicine."

#### OKLAHOMA BOARD OF PHARMACY.

[F. B. Lillie, secretary.]

Applicants desiring to practice this profession in the Territory are required to submit to an examination showing their fitness to compound and dispense drugs. During the past year the board has



held four meetings and 114 candidates have taken the examination. Of these 55 have passed the required general average of 75 per cent and received certificates of registration.

The subjects for examination are pharmacy, chemistry, materia medica, and identification. The candidate must not fall below 50 per cent in any one subject, and must make an average of 75 per cent upon the first three. Identification does not enter into the general average, but must not fall below 50 per cent.

In addition to the written examination, a list of five official crude drugs and five official preparations are submitted to each candidate, who is required to give of the crude drug its official name, synonym, official preparations, habitat, and, if poison, its antidote; of the official preparation, its official name, synonyms, formula, dose, and, if poison, its antidote.

The greater portion of the candidates for registration who have taken the examination are bright active young men who have been learning the drug business by hard knocks in the Oklahoma drug stores and have not had the opportunity to secure a college course in pharmacy.

The record shows that during the last five years, or since the law passed requiring the board to register graduates of the university, there have been 26 certificates of registration issued upon diploma from the pharmacy department of the university.

The work of the pharmacy department of the university is to be commended. Quite a number of the students have taken the examinations of the board at different times, and all have shown thorough knowledge of all the subjects. It has been our experience that the only thing they lack is the practical experience which puts them in touch with the real hard work and business side of pharmacy. This experience should, in part at least, be secured before the student enters school.

The board has undertaken to perform its duties in the enforcement of the law without proceeding to prosecution. This course has been pursued for a reason which, if all understood, we feel sure would be commended. We live in a new country rapidly developing, and we have maintained our pharmacy law since the first legislature by having the good will of the people. To undertake during the growing and developing period of our Territory to enforce the letter of the law would antagonize an element which might and probably would do us irreparable injury in the future.

It is believed that the spirit of the Oklahoma pharmacy law is better enforced in the Territory to-day than in any State in the Union. and the druggists of Oklahoma have the confidence of the people equal to, if not in a greater degree, than will be found in any other section of our country.

There are 434 registered pharmacists, 100 class A permits, 110 class B permits, as compared with July 1, 1903, 394 registered pharmacists, 73 class A permits, 102 class B permits.

#### OKLAHOMA BOARD OF DENTAL EXAMINERS.

[A. C. Hixon, D. D. S., secretary.]

Persons desiring to practice the profession of dentistry in the Territory are required by law to either file for record a diploma from a

recognized college of dentistry or to pass a satisfactory examination before the board of dental examiners.

Two hundred and forty dentists are licensed to practice in the Territory up to the present time.

The number of dentists registered during the past year is 40. Amount of fees collected during the year, \$370. Amount paid out, as per records, for expense of board meetings, etc., \$330.

The board has held two meetings during the past year.

The profession has been reasonably protected from quacks and incompetent persons, three prosecutions having been begun during the past year, in two of which the persons left the Territory before trial was held, and the other is now in process of prosecution.

The proportion of graduate dentists to those not holding diplomas was 90 per cent graduates and 10 per cent nongraduates.

The moral and intellectual standard of dentists in Oklahoma will compare favorably with those of any State in the Union.

#### OKLAHOMA LIVE STOCK SANITARY COMMISSION.

[Thomas Morris, secretary.]

The Oklahoma Live Stock Sanitary Commission was organized for the purpose of protecting the live-stock interests of the Territory by stamping out and preventing contagious diseases and enforcing quarantine regulations. The cattle business being by far the largest live-stock industry in the Territory, and Texas or tick fever being the most fatal and formidable disease to cattle, on account of close proximity to the natural habitat of the fever tick, quarantine laws have been enacted and quarantine lines thrown around the Territory to prevent the introduction of southern cattle.

No cattle are allowed to come in from the infected area except during two months in the winter season, and then only on close inspection and certification that they are free from infection. The enforcement of these regulations is carried out by duly appointed inspectors, who have supervision over the entire Territory. Wherever infection is found the premises are quarantined to prevent the spread of the disease, and owners of cattle are compelled to disinfect the same to destroy the contagion. Parties bringing in cattle unlawfully are arrested and vigorously prosecuted. The success of the board in securing convictions has had a tendency to discourage such violations, so that southern cattle are seldom brought in contrary to law, and native cattle are reasonably safe in all parts of the Territory.

Itch, or mange, has developed in Beaver and part of Woodward counties, but the board is taking vigorous measures to suppress and cure the same by requiring all affected and exposed animals to be dipped in a preparation of lime and sulphur, prepared according to the formula of the Bureau of Animal Industry. So far there has been no tuberculosis in the Territory.

The Territory also has a law that requires the inspection of all animals the flesh of which is to be sold for food, and none but healthy animals are allowed to be slaughtered. This work is carried on by special inspectors under the control of the commission. All marks or brands of such animals must be recorded. This law insures wholesome meat to the people and also serves as a check to thievery and as a means of identifying stolen stock.



There are at this time 190 inspectors of animals for slaughter, whose duty it is to inspect all animals the meat of which is to be sold for food. The compensation of these inspectors is the fees they collect, which is 25 cents each for horned cattle and 10 cents for hogs, sheep, and goats. I herewith attach a copy of rules governing such inspection.

There have been some twenty prosecutions for the violation of this law in the last year, nearly all resulting in the conviction of parties accused.

For the year ending June 30, 1904, 35,176 cattle and 29,923 hogs were inspected and slaughtered; 42 head of cattle and 31 hogs were condemned as being unfit for food.

Herewith is submitted the financial report of the Oklahoma Live Stock Sanitary Commission for the year ending June 30, 1904:

Amount on hand to credit of contingent fund from excess fees of deputy inspectors .....	\$509. 19
Contingent expenses of secretary's office to March 30.....	456. 63
Balance on hand.....	52. 56

This balance was then tied up by the failure of the Capitol National Bank. The annual appropriation of \$200 for contingent expenses, however, was still to our credit.

Amount of appropriation on hand April 1.....	\$200. 00
Expenses of secretary's office to June 30.....	76. 30
Leaving balance to credit of this fund.....	123. 70

Vouchers were drawn on the general fund for secretary's salary and per diem and mileage for members of the board for \$2,074.67, and for animals killed \$116.

Vouchers were drawn on inspectors' fund for \$4,884.37 for salary and expense of the three inspectors.

The following rules and regulations have been promulgated by the Oklahoma Live Stock Sanitary Commission governing the inspection of animals for slaughter and for the information and direction of deputy inspectors:

First. No person who is engaged in the butcher business or in any way interested in the sale of meat is eligible to serve as inspector of animals for slaughter.

Second. Any animal the flesh of which is to be offered for sale as food must be inspected before slaughter. The law requires a personal inspection. A description of the animal by the person slaughtering the same, or the statement of disinterested parties, or the examination of the hide or carcass after slaughter, will not be sufficient.

Third. Permission may be given to slaughter such animals if same are found on inspection to be in a healthy condition. Animals should be condemned for the following reasons: Hog cholera, swine plague, charbon or anthrax, malignant epizootic catarrh, mange or scabies in advanced stages, advanced stages of actinomycosis or lump-jaw, tuberculosis, advanced stage of pregnancy or recent parturition, immaturity, or too young to produce wholesome meat, or any disease or injury causing elevation of temperature affecting the system to a degree which would make the flesh unfit for human food.

Fourth. It is unlawful for anyone to offer any meat for sale to the public unless the same has been inspected before slaughter. This applies to farmers as well as regular butchers.

Fifth. Inspectors shall keep a record of all animals slaughtered, with full descriptions of the same as to color, marks, brands, etc., and send report of same to the secretary of the commission at the end of every week, being careful to report all animals rejected and the cause thereof. A failure to make these reports at least once a month will be sufficient cause for dismissal. Blank



certificates of inspection can be obtained from your local printer or furnished by this office at 50 cents per hundred, which is about the cost of printing and postage.

Sixth. Inspectors may charge 25 cents per head for cattle and 10 cents per head for hogs, sheep, and goats, the attorney-general having ruled that the law contemplates and requires an inspection of hogs, sheep, and goats, as well as horned cattle.

Seventh. Where an inspector is required to go a distance of over 2 miles to inspect animals for slaughter he may charge mileage at the rate of 10 cents per mile one way for all distances traveled over the said 2 miles, and shall have the right to refuse to make inspection unless mileage is paid as above set forth.

Eighth. The law governing the inspection of animals for slaughter may be found in sections 16 and 17, chapter 31, of the session laws of Oklahoma for the year 1897.

#### THE COURTS.

The business of the courts during the past year has been greater than in former years, as is indicated by the tabulated statements which I have prepared from the reports sent me by the clerks of the several districts.

##### SUPREME COURT.

Cases docketed during the year	197
Cases disposed of during the year	136
Total number of cases on docket June 30, 1904	161

##### DISTRICT COURT.

First district:	
Cases docketed during the year	966
Cases disposed of during the year	755
Total number of cases on docket June 30, 1904	593
Second district:	
Cases docketed during the year	850
Cases disposed of during the year	707
Total number of cases on docket June 30, 1904	623
Third district:	
Cases docketed during the year	1,331
Cases disposed of during the year	1,099
Total number of cases on docket June 30, 1904	661
Fourth district:	
Cases docketed during the year	1,145
Cases disposed of during the year	981
Total number of cases on docket June 30, 1904	742
Fifth district:	
Cases docketed during the year	1,239
Cases disposed of during the year	1,012
Total number of cases on docket June 30, 1904	583
Sixth district:	
Cases docketed during the year	646
Cases disposed of during the year	511
Total number of cases on docket June 30, 1904	357
Seventh district:	
Cases docketed during the year	1,265
Cases disposed of during the year	1,000
Total number of cases on docket June 30, 1904	987

##### OFFICIAL ROSTER.

Governor: Thompson B. Ferguson.

Private secretary to the governor: Robert M. Carr.

Secretary of the Territory and ex officio lieutenant-governor: William Grimes.

Assistant secretary: J. M. McConnell.

Attorney-general: Percy C. Simons.

Assistant attorney-general: Don Carlos Smith.

Treasurer: C. W. Rambo.

Superintendent of public instruction and ex officio auditor: L. W. Baxter.

Deputy auditor: E. P. McCabe.

Secretary school land board and ex officio school land commissioner: Fred L. Wenner.

Assistant secretary: H. F. Ardery.

Oil inspector: F. A. Ashton.

Bank commissioner: Paul F. Cooper.

Deputy bank commissioner: D. J. Moore.

Librarian: J. W. Foose.

Assistant librarian: Addie F. Homrighouse.

Adjutant-general: E. P. Burlingame.

Grain inspector: A. H. Jackman.

Game warden: J. C. Clark.

Territorial geologist: A. H. Van Vleet.

Territorial school land board: Governor Ferguson, Secretary Grimes, Auditor Baxter.

Board of equalization: Governor Ferguson, Secretary Grimes, Auditor Baxter.

Regents of Territorial University: Governor Ferguson; J. L. Wilkins, Oklahoma City; D. L. Larsh, Norman; H. B. Gilstrap, Chandler; R. E. Wood, Shawnee; George W. Sutton, Cleveland.

Regents of Agricultural and Mechanical College: Governor Ferguson; Frank J. Wikoff, Stillwater; Henry J. Beard, Shawnee; T. J. Hartman, Pond Creek; H. C. R. Brodball, Ponca; W. H. Merten, Guthrie.

Live-stock sanitary commission: W. E. Bolton, Woodward; Thomas Morris, secretary, Guthrie; Peter A. Becker, Jefferson.

Board of education of normal schools: Superintendent Public Instruction Baxter; Treasurer Rambo; Charles M. Thacker, Mangum; William Wood, Edmond; G. E. Nichols, Alva.

Board of regents Colored Agricultural and Normal University: Superintendent Public Instruction Baxter; Treasurer Rambo; U. C. Guss, Guthrie; E. O. Tyler, Kingfisher; James A. Rouse, Cooper.

Territorial board of education: Superintendent Public Instruction Baxter; President D. R. Boyd, Norman; President F. H. Umholtz, Edmond; Prof. G. D. Moss, Kingfisher; Prof. Edward S. Vaught, Oklahoma City.

Regents of university preparatory school: Governor Ferguson; William W. Gregory, Tonkawa; Jerre H. Johnson, Newkirk.

Presidents of the Territorial institutions of learning: D. R. Boyd, Norman, Territorial University; F. H. Umholtz, Edmond, Central State Normal School; T. W. Conway, Alva, Northwestern Normal; A. C. Scott, Stillwater, Agricultural and Mechanical College; Inman E. Page, Langston, Colored Agricultural and Normal University; J. F. Kelley, Tonkawa, University Preparatory School; J. R. Campbell, Weatherford, Southwestern Normal.

Board of health: Auditor L. W. Baxter; Dr. E. E. Cowdrick, superintendent and ex officio secretary, Enid; Dr. B. F. Hamilton, president, Shawnee; Dr. E. G. Sharp, vice-president, Guthrie.

Board of pharmacy: F. B. Lillie, Guthrie; A. B. Clark, Watonga; E. E. Howendobler, Perry.

Board of dental examiners: A. C. Hixon, Guthrie; Fred C. Sparks, Ponca City; A. M. Detrick, Oklahoma City; J. Q. Waddell, Kingfisher; L. A. Kelsy, Chandler.

Commissioners to the Louisiana Purchase Centennial Exposition, St. Louis: Jos. Meibergen, Enid; Otto A. Shuttee, El Reno; Edgar B. Marchant, Aline.

Supreme court: Chief justice, John H. Burford, Guthrie; associate justices, C. E. Irwin, El Reno; B. F. Burwell, Oklahoma City; B. T. Hainer, Perry; J. L. Beauchamp, Enid; J. L. Pancoast, Alva; Frank E. Gillette, Anadarko.

Clerks of court: Supreme court, B. F. Hegler, Guthrie; first district, T. A. Neal, Guthrie; second district, E. M. Hegler, El Reno; third district, Byron D. Shear, Oklahoma City; fourth district, Jay E. Pickard, Perry; fifth district, J. P. Renshaw, Enid; sixth district, E. P. Kelley, Alva; seventh district, N. E. Sisson, Anadarko.

## PART V.

There are 22 cities of the first class and 26 counties in Oklahoma. A short sketch by some person residing in each of the cities or counties is given in this section.

## Cities :

Alva.  
Anadarko.  
Blackwell.  
Chandler.  
Edmond.  
Elreno.  
Enid.  
Geary.  
Guthrie.  
Hobart.  
Kingfisher.  
Lawton.  
Newkirk.  
Norman.  
Oklahoma City.  
Perry.  
Ponca City.  
Pond Creek.  
Shawnee.  
Stillwater.  
Tecumseh.  
Weatherford.

## Counties :

Beaver.  
Blaine.  
Caddo.  
Canadian.  
Cleveland.  
Comanche.  
Custer.  
Day.  
Dewey.  
Garfield.  
Grant.  
Greer.  
Kay.  
Kingfisher.  
Kiowa.  
Lincoln.  
Logan.  
Noble.  
Oklahoma.  
Pawnee.  
Payne.  
Pottawatomie.  
Roger Mills.  
Washita.  
Woods.  
Woodward.

## CITIES OF THE FIRST CLASS.

The legislature of 1893 passed an act enabling towns having a population of 2,500 to become cities of the first class, providing for the segregation into wards and the election of a mayor, councilmen, and other officers, and to exercise the corporate powers of cities of other States. During the past year the town of Edmond was added to the list, making twenty-two cities which have been by the governor's proclamation made cities of the first class.

Through the courtesy of the secretaries of the commercial clubs in these places I am enabled to give some facts relative to their location, industries, railroad facilities, etc.

I regret very much the necessity of omitting the population in each instance, but as the annual census is not compulsory assessors seldom return accurate figures, and in most cases estimates only could be given.

## ALVA.

Alva is the county seat of Woods County, and is located in the northwestern portion of the county. One of the United States land offices is located here, and also the Northwestern Normal School.

There are 9 churches, including all denominations. Alva has an efficient waterworks system, also public telephone and electric lights. There are 5 grain elevators, roller mill, creamery, broom factory, ice plant, steam laundry, and 5 lumber yards. Also 2 national and 3 State banks, 2 fine school buildings, and 5 weekly papers and 1 daily.

Both the Santa Fe and Rock Island railroads enter Alva, and there are 2



machine shops. There are over 60 business houses now occupied by various lines of business. The bonded indebtedness is \$58,000 for waterworks.

#### ANADARKO.

The city is located on the Washita River, near the center of Caddo County, of which Anadarko is the county seat.

Anadarko has the following public buildings: Temporary county court-house, county jail, city hall, and fire house.

It has the following public improvements under construction, or to be constructed soon: One eight-room brick school building under course of construction; complete waterworks system under course of construction; county court-house; sanitary sewer system, and electric light plant to be built immediately.

It has a flouring mill and 2 elevators, employing 10 men; also 17 manufacturing establishments employing 95 men; 5 wholesale houses employing 16 men; 4 weekly and 1 daily newspapers; 7 hotels; 3 banks, and nearly a hundred other industries, giving employment to 400 persons. Two railroads, Chicago, Rock Island and Pacific, running east and west; Enid and Anadarko, running north and south.

Anadarko has 10 churches; graded schools with 15 teachers; \$30,000 voted for sewer system and electric lights; streets graded but not paved; a public park of 45 acres on Washita River; 23 two-story brick or stone and 8 one-story brick or stone buildings completed; 9 two-story brick or stone buildings under construction; 1 eight-room school building; Catholic, Methodist, Presbyterian, and Baptist missions for education of Indians, and United States schools for the education of Indians; United States Indian agency, paying out over \$250,000 annually; finest water power in the Southwest; large beds of cement close to the city.

Anadarko needs a foundry, a compress, cotton-seed oil mill, cotton mill, creamery, canning factory, cement works, and gas plant.

The following buildings have been constructed during the past twelve months: Thirteen brick storerooms, 2 hotels, and 30 frame residences.

#### BLACKWELL.

This city is located on the Chicaskia River, about 18 miles south of the State line.

We have the main line of the 'Frisco railroad running from St. Louis to Vernon, Tex.; also two lines of the Santa Fe, one being the Hutchinson and Southern branch, from Hutchinson, Kans., to Ponca City, and the other a branch running from Wellington, Kans., to Tonkawa. We have three other lines chartered and work on the same is expected to begin this fall. They are the Fort Smith, Blackwell, Wellington and Northwestern Railroad, the Blackwell and Northeastern, and an electric line from Adair, Ind. T., to Blackwell.

*Public buildings.*—We have the Oklahoma State Baptist College; opera house; 1 ward school building and 1 central high school building, constructed of brick; city hall.

*Public improvements.*—Waterworks, costing \$60,000 (owned by city); electric-light plant; 2 parks; fair grounds; 6 miles of cement and vitrified-brick sidewalk; local and long-distance telephone (local exchange, 300 subscribers and 9 toll lines); streets curbed and guttered for 12 blocks.

The commercial club has elegant club rooms.

Among our manufactures are three mills—the Blackwell Milling and Elevator Company, with a capacity of 500 barrels; Kay County mill, 75 barrels; Little Giant mill, 25 barrels—and seven elevators, with a capacity of 300,000 bushels.

Two marble works, brick plant, cigar factory, planing mill, 2 machine shops, ice plant, all of the above plants giving employment to 114 people.

There are 3 newspapers—2 weeklies and 1 daily.

We have the following church buildings: Methodist Episcopal, Baptist, Christian, Presbyterian, United Brethren, German Lutheran, and Catholic.

The Masonic order and the Odd Fellows each own splendid brick buildings.

In addition to those there are lodges of Knights of Pythias, Modern Woodmen, Knights and Ladies of Security, Ancient Order of United Workmen, Fraternal Aid, Maccabees, Daughters of Rebekah, Eastern Star, Grand Army of the Republic, Sons of Veterans, and other orders.

Three banks, with total capital of \$80,000, there being two national and one State bank.

During the past year there were 7 business houses erected, and at this time there are 4 in course of erection.

There were 57 residences constructed during the past year, and at this time there are 12 in course of construction. Three elevators were built during the past year, waterworks completed, 2 miles of cement and vitrified-brick sidewalk laid, 1 church completed, and a large three-story hotel, 75 by 140 feet, will be constructed this summer. Also sewer system and extension of waterworks. Natural gas has been discovered in paying quantities within 1 mile of the city limits.

Blackwell needs a strawboard factory, paper mill, shoe factory, box factory, and cannery. Ample raw material for such establishments is near at hand.

The city has a bonded debt of \$63,000, \$3,000 of the same being scrip issued to bore for artesian water, and \$60,000 for waterworks.

#### CHANDLER.

The chief advantages of Chandler are its location in the center of a thickly populated and prosperous agricultural county, and the fact that it is the county seat, largest town, and chief market and trading point in the county.

Chandler has 2 brick and 2 frame school buildings, and as good schools as any town in Oklahoma; 8 church edifices, good opera house, and good hotels.

A \$50,000 waterworks system is in course of completion and \$15,000 is being spent on street improvements. Have good electric-light system and good telephone exchange, with long distance connections with all towns of the Territory. Have main line of Frisco railway, with branch from this point to Guthrie. Three national banks in good condition. Manufactures include cotton-seed oil mill, ice factory, pressed-brick plant, flour mill, 3 feed mills, 5 cotton gins. Six good business buildings were erected during the year. Bonded indebtedness was for erection of school buildings and for waterworks and street improvements.

#### EDMOND.

The city of Edmond, Oklahoma County, is situated on the main line of the Atchison, Topeka and Santa Fe Railway, 17 miles south of Guthrie and 15 miles north of Oklahoma City. It is a city of the first class, having been proclaimed as such June 28, 1904. Altitude, 1,235 feet above sea level.

There is a fine cotton gin here and another one contemplating building. There are 2 safe and conservative banks, 2 newspapers with a wide circulation, 3 lumber yards, 15 dry goods and grocery stores, 3 fraternal society halls, and 8 fraternal societies.

Edmond is especially proud of its churches and schools, of which there are 7 church building and 2 public schools. The State Central Normal School is located here. It has now 2 complete buildings, equipped with electric light, water system, and steam heating plant. The enrollment of students has increased each successive year.

There are 2 public parks and a boulevard nearly 2 miles in length.

Edmond City is lighted by acetylene-gas lights. Its sidewalks are unexcelled by any of its size in the West, it having brick sidewalks on both sides of the principal streets to the city limits. Edmond is contemplating having waterworks and electric lights next year. It is on the interurban street-car line now surveyed between Oklahoma City and Guthrie. About 100 buildings were erected last year, and many others are now in course of construction. The bonded indebtedness for the public schools is \$5,000, for other purposes \$3,600, principally for street crossings.

A canning factory would do well here, as there are an abundance of fruits and vegetables raised each year; also an excellent location for an ice plant.

Edmond has never experienced a building boom, so common with many new towns, but has enjoyed a steady growth from the first. The progressiveness of its citizens is evidenced in the fact that here was built the first schoolhouse and the first church building in Oklahoma after the opening to settlement. Also the first weekly newspaper was published here, the Edmond Sun, established by the Hon. Milt Reynolds, which paper is still published. There are no better school facilities found in the Southwest than are accorded here—a fact manifested by the enrollment of students from several States.



The country east is mostly timbered, and is interspersed with small streams whose valleys are very productive for corn, wheat, and vegetables. The uplands between these streams are planted mostly in cotton, a crop that seldom fails. The country west has proven to be one of the banner wheat-raising sections of Oklahoma. This crop is almost universally raised. Edmond has two flouring mills and elevators, each doing a good business. Flour ground in these mills of wheat grown in this neighborhood has taken the gold and silver medals at the World's Fair.

## EL RENO.

El Reno is the county seat of Canadian County, Okla., metropolitan in character, education, and energy. El Reno is located in a splendid agricultural and stock farming country, with excellent railroad facilities, and contains among other industries and commercial enterprises the following:

Electric-light system, cost \$100,000.

Gas plant, cost \$100,000.

Two flour mills, daily capacity 1,000 barrels; storage capacity, 1,000,000 bushels.

Four lines of elevators capitalized at \$500,000, with annual business exceeding \$5,000,000.

Ice plant, capacity 75 tons daily.

Three telephone systems, telegraph, water system, sewerage system, foundry and machine shops, foundry and model works, 3 brickyards, 3 wholesale houses, distributing point for 22 manufacturing plants, bottling works, machine-repair works, carriage factory, mattress factory, 1 cotton gin and 1 compress, creamery, cigar factory, 3 daily newspapers, 5 weeklies, transfer and storage company, bus and transfer company, 2 wholesale hardware houses, 2 wholesale grocery houses, 3 express companies—all employing 1,000 employees.

Among the educational institutions we have 4 ward schools, public high school, Carnegie Library, and parochial school.

Among the public buildings are the county court-house, costing \$55,000; city hall, land office, and city hospital.

New buildings and structures of the past year will exceed \$100,000 in value.

Among the new structures now in course of construction and contemplated are the new Third Ward high school, opera house, normal college and commercial institute, Elks' home, Young Men's Christian Association building, new union depot, and packing plant.

El Reno has 3 banks, 2 national and 1 State; combined capital, \$125,000; total deposits, \$1,000,000.

*School census.*—Total enrollment, 1,206; average daily attendance, 834; enumeration school census, 1,500; teachers employed, 23; supply teachers, 2; school year, 9 months; number of common school grades, 8; high school course, 4 years.

El Reno has 3 railway systems, which employ 200 men in Canadian County. The Choctaw, Oklahoma and Gulf, having been purchased by the Chicago, Rock Island and Pacific, is now known as the Rock Island system, with passenger division at El Reno. The St. Louis, El Reno and Western, with direct trunk-line connections east, is an independent system.

The amount of freight handled during the fiscal year of 1904 by the Rock Island alone exceeds 6,000,000 pounds. The number of cars shipped from El Reno is as follows: Grain, 1,837; stock, 104; machinery, 48; miscellaneous, 202.

The annual passenger business for the roads of El Reno alone exceeds \$150,000 annually.

El Reno contains 13 churches, Young Men's Christian Association reading rooms, 21 fraternal societies; 10 miles of sewer; water capacity, 1,700,000 gallons daily; streets guttered and curbed; 25 miles of sidewalks; new business houses last year, \$250,000; new residences, \$100,000.

Canadian County can furnish raw material in any quantity needed for packing industries, strawboard factory, oil mill, and fine water for manufacturing purposes and in any quantity.

## ENID.

*Location.*—One hundred miles south of Wichita, 60 miles northwest of Guthrie, in fine agricultural section; county seat of Garfield County.

*Railroads.*—On main lines of the Rock Island, Frisco, Denver, Enid and Gulf,



Arkansas Valley and Western, Enid and Tonkawa, and Enid and Anadarko, giving railroad outlets in ten different directions. Division point for all roads except the Rock Island.

*Manufactures.*—Extensive brick plants; steel-bridge plant; 100-ton ice plant; 3 flouring mills, with 1,000 barrels daily capacity; yeast factory; broom factory; 2 machine shops; Frisco repair shops; cigar, candy, and other factories.

*Wholesale houses.*—Four large wholesale grocery houses, all doing flourishing business; four large produce houses; distributing point for several of the large agricultural-implement houses.

*Employees.*—Number of skilled workmen employed in the various manufacturing and wholesale institutions and by the railroads, 1,280.

*Public improvements.*—Compete electric light and power plant, gas plant, sewer system, local and long-distance telephone systems, waterworks plant, parks system, 3 modern brick schoolhouses, 10 churches.

*Banks.*—Four banks; aggregate deposits, \$1,500,000.

*Building.*—Number of brick business buildings erected during past year, 15; residences, 250.

*Industries needed.*—Street-car system, creameries, and any manufacturing institution that will handle the products of an agricultural section; also room for more jobbing houses.

#### GEARY.

Geary is located about midway between the two Canadian rivers, on an elevation above the level of the valleys surrounding it, thus insuring natural drainage in all directions.

The town was opened in May, 1898, by the advent of the Choctaw, Oklahoma and Gulf Railroad. It has grown rapidly from the beginning. The building of the Choctaw Northern Railroad between Geary and Anthony, Kans., added additional incentive to enlarge the town, and the completion of the Enid and Anadarko Railroad makes this city a railroad point with facilities reaching out in five directions, with the certainty that a complete waterworks system will be in operation inside of three months, and the railroad company has already established a terminal and freight division, with roundhouse and other conveniences, employing now sufficient men so that over 50 families are living here supported from that source alone. The city has been assured that with a waterworks system in operation the railroad company will materially increase their interests here. The railroad's business now uses over 5 miles of side track here.

The city has a large brick eight-room schoolhouse, a ground-floor opera house, erected last year—the best equipped building in western Oklahoma.

The manufacturing interests are represented by a 300-barrel flouring mill, employing 19 hands; a pressed-brick plant, employing 17 hands; a cigar factory, a cotton gin, a skimming station, and 75 business houses. There are 7 churches and 3 banks.

The city needs wholesale houses, another cotton gin, a canning factory, oil mill, broom-corn sorting establishment, broom factory, foundry and machine shops, ice plant, electric-light plant, and a steam laundry.

The opera house, the new brick schoolhouse, 1 brick bank building, 5 stores, and a good many residences were built last year. The city is bonded for a waterworks system in the sum of \$52,000. Work on the same will begin in thirty days. The school district is bonded for \$8,000, being for the new schoolhouse. The I. O. O. F. lodge has purchased ground and will soon begin building.

The territory tributary to Geary is large and embraces the best valley lands in the Territory, well adapted to diversified farming.

Judging by the indications, it will only require the sinking of a well to find oil and gas in abundance. Everything considered, Geary is among the most fortunate growing cities in the Territory. Her enterprising citizens will not spare any effort to place Geary in the front of the prominent cities of the future State.

#### GUTHRIE.

*Location.*—The location, both as to beauty and sanitary conditions, is unexcelled, as the natural drainage is perfect. The Cottonwood River runs through the city, and the Cimarron is only 1 mile north.

*Public buildings.*—Carnegie library building, value \$40,000; Masonic temple, value \$65,000; city hall, value \$35,000. Contract has been let for a \$100,000 Government building.

*Public improvements.*—Six miles of vitrified brick paving; perfect sanitary sewerage system, costing \$65,000; 50 miles of brick and cement sidewalk; fire department, consisting of three well-equipped stations and the most perfect waterworks system in Oklahoma Territory, costing over \$100,000; \$150,000 gas plant; 2 telephone systems.

There are 40 manufacturing establishments, covering twenty separate and distinct industries.

There are 20 wholesale houses, handling eleven lines of goods.

*Churches.*—Seventeen buildings. Practically all denominations are represented.

*Schools.*—Six city school buildings and one county high school building, the first in the Territory; Catholic convent, the largest and best equipped business college in the southwest, and a conservatory of arts and music.

*Railroads.*—Guthrie has 8 railways, and the ninth building.

*Banks.*—Guthrie has 4 banks, with a total deposit of \$1,800,000.

*Bonded indebtedness.*—The bonded indebtedness is \$215,000, divided: Water, \$85,000; city hall, \$25,000; sewerage system, \$65,000; refunding, \$40,000.

*New buildings.*—During the past year 2 three-story and 5 two-story buildings were erected, while a number of smaller ones were completed, and about 200 residences were built.

*Raw material for factory.*—Cotton, corn, wheat, fruits, vegetables, straw, and clay.

#### HOBART.

Hobart is located at the junction of the Rock Island and Frisco railroads, 45 miles from the Texas line south and west, and by reason of the geographical position which she occupies commands a wide range of trade not only in Kiowa, but from the adjoining counties of Washita and Greer.

Hobart is the county seat of Kiowa county, and has an altitude of 1,528 feet.

Few cities have done more in the way of building than Hobart. She has two four-room frame schoolhouses and one \$12,000 eight-room school building, with a school population of over 900.

The enterprise that builds schoolhouses has built a Congregational Church costing \$4,000, a Methodist Church North costing \$3,500, a Methodist Church South costing \$3,000, a Baptist Church costing \$3,000, a Christian Church costing \$2,500, a Presbyterian Church costing \$1,000, and a Catholic Church costing \$900.

Our cotton-seed oil mill, the second largest in the United States, cost over \$100,000, employs 35 hands; our 3 cotton gins employ 21 men; our 200-barrel mill employs 7 men; the elevator, 4 men; one foundry machine shop, 5 men; cotton compress employing 22 men; electric-light plant, 6 men; ice plant, 10 men; ice cream and bottling works, 6 men; 3 laundries, 21 men.

The city has a \$25,000 system of sewerage, and a \$50,000 waterworks plant is now being put in and will be completed this year.

Since August, 1903, there has been built in the city 54 two-story brick business houses, modern in every way. Permits were issued for 127 residences last year.

We have 4 national banks, with deposits amounting to over \$500,000.

The city has \$37,000 bonded debt for waterworks and sewerage.

We have the very highest grade of clay for brickmaking, and our brick-kilns have been kept busy to supply the demand. We have a clay in abundance that will make the very best of tile and crockery and awaits development.

We have unlimited quantities of the best of building rock, magnesian, and granite.

The cotton crop that will be marketed here by February 1 will amount to over 50,000 bales.

We need a canning factory and a creamery.

#### KINGFISHER.

Kingfisher City is located at the junction of Uncle Johns and Kingfisher creeks, in the center of a very fine agricultural country and very near the center of the Territory.

The public buildings consist of a court-house, post-office, city hall, college, and school buildings.

We have 10 mills and elevators, ice factory, 3 machine shops, 1 paint and



carriage shop. The number of employees in the shops, elevators, mills, etc., is 70.

We have 2 railroads, 4 national banks, 8 churches, 2 large public school buildings, and 1 fraternal society building.

We have waterworks and electric-light plants owned by the city and run with perfect success. We have no paved streets, but have over 6 miles of brick and cement sidewalks in the city. There were 4 business houses built here in 1903, and 2 are now in the course of erection.

We need a broom factory, paper mill, wagon shop, pressed-brick plant, and a wholesale grocery.

We have \$70,000 bonded indebtedness, incurred solely for electric lights and waterworks.

#### LAWTON.

Lawton is the county seat of Comanche County, and is one of the new towns of the Southwest, having been established many miles from a railroad at the time of the opening of the Kiowa-Comanche country, August 6, 1901. Its rapid and substantial growth is truly marvelous.

There is now under construction a waterworks system to cost \$76,000, and a complete sewer system will also be built as soon as bids are submitted to and approved by the Secretary of the Interior.

We have 3 frame schoolhouses, frame court-house, 7 churches, 2 cotton gins, working about 8 men each; 2 ice plants, working about 10 men each; 1 pressed-brick plant, working about 15 men, capacity 20,000 per day; 2 railroads, Chicago, Rock Island and Pacific and the Frisco; 1 electric-light plant, 2 small elevators, 1 I. O. O. F. hall, frame; 6 banks, 2 national and 4 Territorial; bonded indebtedness, city, \$45,000 (\$20,000 to pay outstanding indebtedness and \$25,000 to build city hall); school bonds, \$21,000, to pay outstanding indebtedness; business houses erected in 1903, stone and brick, 7; dwellings erected in 1903, estimated at 200.

Lawton needs a good flour mill, compress, oil mill, good elevator, wholesale houses.

Court-house, schoolhouses, sewer system, at once, bridges all to be built out of the lot fund, as provided by act of Congress. If this fund could be used at this time for the purposes intended, it would go largely to relieve the depression, supply buildings and improvements badly needed to preserve the public records, supply suitable school buildings, make the streams passable so that travel on our highways would be convenient instead of being hazardous and dangerous as they now are.

#### NEWKIRK.

The city of Newkirk is a modern stone and brick built city. It is the county seat of Kay County, famous as being, perhaps, the best agricultural county in the Territory. The city is now near the center of the county, Congress at its last session having added to Kay County the Kaw Indian Reservation on the east and a portion of the Ponca Indian Reservation on the south, and the county commissioners in pursuance of said act of Congress have duly organized township government in said Indian reservation.

Newkirk has streets well paved with broken stone. Its business houses are built of stone, also the two large and commodious school buildings and the city hall. The stone is white limestone, easily worked and very handsome. It is secured from quarries about 4 miles east of the city. Quite an industry has sprung up in the stone business, the railway lines having secured it for new depots at Shawnee, Oklahoma City, and elsewhere.

The railways comprise the Santa Fe main line and the new line of the Santa Fe, known as the eastern branch, running from Newkirk to Pauls Valley, in the Indian Territory. The city has an excellent system of waterworks, also a new and substantial electric-lighting plant. There are 3 elevators and another is needed. There is no flour mill, the one located here several years since having burned. This is unquestionably one of the finest openings in the West for a flour mill.

The bonded indebtedness of the city is \$50,000 for waterworks and \$6,000 for city hall.

Both natural gas and petroleum oil have been discovered here. The oil has a paraffin base and is similar to the remarkably fine oil discovered at Muskogee. A local gas and oil company has been organized with a capital stock of \$1,000,000.



This company has purchased a good drilling outfit, and is now engaged in the development of this oil and gas field, having some 16,000 acres leased. Natural gas has been piped from a farm on the edge of the city to the court-house square, where it was ignited, and the roar of the flame could be heard all over the city. This well was ruined in the effort to drill deeper in the search for oil. The prospects for both oil and gas are so strong that other companies have entered the field, and the work of development is now actively going forward.

#### NORMAN.

Norman is the county seat of Cleveland County, 18 miles southeast of Oklahoma City, and is located in one of the best farming sections of the Territory. Seat of the Territorial university, the buildings consisting of main hall, \$93,000; science hall, \$35,000; Carnegie Library, \$30,000; athletic building, \$2,500; other buildings, \$5,000. Also, asylum for insane, more than 400 inmates; county court-house, to cost \$35,000, to be built this fall; 1 large flouring mill; 2 grain elevators; 2 cotton gins; 1 cotton-seed oil mill; 1 ice plant, 10 tons daily capacity, all employing about 40 men. One railroad, Atchison, Topeka and Santa Fe; electric line from Oklahoma City to Sulphur Springs, prospective; 11 churches; 2 public school buildings; 3 national banks, \$50,000 capital each; waterworks with standpipe and direct pressure, owned and operated by the city, cost about \$30,000, bonded for \$16,500, being the only bonded indebtedness of the city.

Not much improvement during the past year in the way of residence and business building.

#### OKLAHOMA CITY.

*Location.*—Beautifully located on the North Canadian River and built on undulating ground.

*Public buildings.*—Carnegie Library, valued at \$35,000; city hall, valued at \$80,000; court-house, under course of construction, to cost, when completed, \$140,000.

*Public improvements.*—Fire department, composed of three stations fully equipped, total value, including realty property, \$32,084; 14 miles of asphalt pavement laid and several blocks under construction; 78 miles of brick and cement sidewalks; 2 gas and electric lighting plants; waterworks estimated at \$300,000; storm and sanitary sewerage; 2 telephone systems; electric street railway, which has 18 miles of road in operation and 3 miles under construction, and is equipped with 25 cars.

*Churches.*—Fourteen religious denominations and 22 buildings, valued at \$400,000.

*Schools.*—Eight school buildings, valued at \$350,000; Epworth University, when completed, will cost \$100,000; Sisters of Mercy College for Girls, cost \$225,000; Oklahoma State Military Institute, valued at \$50,000.

*Railroads.*—Oklahoma City has 5 railways.

*Banks.*—There are in this city 5 national and 3 State banks, with a total deposit of \$2,992,532.02 on June 1.

*Bonded indebtedness.*—The bonded indebtedness of the city is \$248,500, which was incurred for the construction of a city hall, waterworks, and sewerage.

*Fraternal society buildings.*—India Temple, to cost, when completed, \$95,000.

*Raw materials for factories.*—Cotton, fruits and vegetables, straw, and clay.

There are some 60 factories, covering 34 distinct industries; 47 wholesale houses, handling 17 different lines; 31 business houses, many of them from five to six stories in height, have been erected during the past year; also 3 fine church buildings, costing \$130,000.

Improvements have been made in Putnam Park and Delmar Garden costing \$23,000.

There have also been erected 375 residences, ranging in value from \$750 to \$65,000 each. There are now under construction 15 residences.

The officials of two railroads have signified an intention to build into Oklahoma City at once.

Ten railroads have been surveyed into Oklahoma City, and profiles, estimates, maps, and other details have been completed, two of said lines being electric lines.

The lines enumerated above are regularly organized and working under charters.

## PERRY.

Perry, the county seat of Noble County, enjoys a most excellent water, electric-light, and ice plant, which is owned and operated by the city; one of the largest flouring mills in the Territory; 4 grain elevators; cotton gin; 2 cigar factories; marble works; 2 national and 1 private bank, all in excellent financial condition and well managed; 6 hotels; local lodges of all the prominent secret orders, in flourishing condition; wood and carriage works; the Santa Fe and 'Frisco railroads intersect here, giving ingress and egress to all points east, west, north, and south, with the Missouri Pacific survey completed and its construction projected.

Perry has 11 churches, all denominations being represented; a system of graded schools that compares favorably with northern cities and employs 17 teachers, with an attendance of 1,080 scholars. The fire department is well equipped and ranks with the best in the Territory. The streets are paved with cement and brick, while the sewerage system of the city is excellent. Two daily and 5 weekly papers furnish the news for her people. During the past year there have been erected 7 brick and stone business blocks and 21 residences. An extension of the sewer system is being projected, and the contract has just been let for a 2,000-foot gas and oil well, which products have of late been assured to exist in this district.

A creamery is needed; also a brick plant to utilize the most excellent brick and tile shale, that exist in inexhaustible quantities near the city.

Perry has been one of the best grain markets in the Territory the past year. A total of 1,844 cars of freight were shipped out, as against 1,700 cars the year preceding. Out of this there were 976 cars of grain, 9,327 bales of cotton, and 362 cars of cattle and hogs.

One thousand eight hundred and eighty-three cars of freight were shipped in last year. Of those there were 498 cars of lumber and 452 of coal. The total freight receipts of the year were \$486,133.42.

Seven rural routes have been established from the Perry post-office in the past two years. The routes cover a district with a radius of 12 miles and serve 3,000 people.

Perry is a city of parks, the cultivation of forestry being so assiduously carried out that each street and home lawn, with its shade trees and shrubbery, make it the prettiest summer city in the Territory.

## PONCA CITY.

*Location.*—Southeast part of Kay County, on the Arkansas River, which here forms the line between the county and Osage Reservation.

*Advantages.*—Center of rich agricultural, stock, and fruit section, drawing trade also from the big ranches of the Indian reservations on the east and south. Large grain and stock shipping business, flouring mills, and grain elevators. Unlimited water supply and excellent building stone.

*Public buildings.*—City hall, completed at cost of \$10,000 and paid for; public park improvements valued at \$5,000; city waterworks plant, owned by the city, original cost \$35,000; betterments within the year, \$10,000; electric-light plant, costing \$25,000; ice plant, completed within the year at cost of \$40,000.

*Prospective improvements.*—Paving of principal streets and sewerage system.

*Schools.*—Public school enrollment, 1,250. High school building of 20 rooms, ward schools; St. Mary's Institute, with attendance of about 300. Another school building of 8 rooms will be completed within a few months.

*Churches.*—Methodist Episcopal, new church just completed, cost \$5,000; the Presbyterians, Baptists, Disciples, and Catholics all have fine buildings; the Episcopalians have a building in course of erection. Aside from these, several others hold services in halls.

Manufacturing establishments, 17; hands employed, 125.

*Railroads.*—Main line Atchison, Topeka and Santa Fe, and terminus of the Hutchinson and Ponca City.

Wholesale establishments, 7; hands employed, 54.

Number of business houses erected during past year, 10; residences, 50.

Industries needed, paper mill, cement works, brick yards, garment factory, pottery, canning works, etc.

*Raw materials.*—Straw, stone, clay, fruit, vegetables, etc.

*Bonded indebtedness.*—For waterworks, \$35,000.



Projected railroads from the coal fields on the east and the discovery of oil and gas just outside our borders afford good reason for the future growth of the city.

## POND CREEK.

Pond Creek is the county seat of Grant County. It is one of the largest wheat-shipping stations in the United States. It has one flouring mill with a 500-barrel capacity of first patent flour and storage capacity of 90,000 bushels of wheat. It has 5 grain elevators, with a combined storage capacity of 60,000 bushels of wheat, making a total storage capacity of 150,000 bushels, and with all of this storage capacity and daily shipments of grain they have not been sufficient to handle the wheat during the threshing season.

Pond Creek has only one railroad, which is the main line of the Chicago, Rock Island and Pacific, from Chicago to Dallas, Tex. It has 1 splendid public school building, two-story brick, and 1 frame public school building; 2 national banks, 6 churches, 1 fraternal building, 7 fraternal lodges, 2 machine shops, 2 brick plants. Four brick business houses and 22 residences were built in the past twelve months; one 50 by 150 brick business house and 3 residences in course of construction.

Buildings and enterprises that are almost an assured thing are a two-story brick Odd-Fellow building, a 300-barrel flour mill, and the passenger and freight division of the Chicago, Rock Island and Pacific Railroad.

Pond Creek has good cement sidewalks, curbing and guttering, a good system of waterworks, 2 good fire companies, 2 hose carts, hook and ladder. The city has a bonded indebtedness of \$25,000 for waterworks system.

The city needs an ice plant, electric-light plant, and creamery.

## SHAWNEE.

The city of Shawnee is located on the North Canadian River, a very valuable stream, with wide, rich, fertile bottom, from which we draw water for the supply to our waterworks, and it is also a means of drainage for the sewerage of our city. We have a public system of waterworks, electric-light plant, electric street railway, and paved streets. The large machine shops of the Rock Island are located at Shawnee, employing from 400 to 500 skilled machinists; besides, they have their general freight and passenger division point located here. We have a large cotton-seed oil mill, foundry, garment factory, and candy factory. Shawnee is also the passenger and freight division point of the Santa Fe Railroad, where they have a large roundhouse and repair shop in course of construction.

We are located in the richest part of Oklahoma, being the southeastern county, where we have plenty of rain and have never known a drought. Our chief products are cotton, corn, wheat, oats, potatoes, and fruit. Our reputation as a potato-producing country rivals Kaw Valley, Kansas, with this advantage—we raise two crops a year, fall and spring crops. Two years ago we shipped out 915 cars in the spring and about 400 cars during the fall crop. We have three railroads—the Katy, Rock Island, and Santa Fe; also a branch of the Rock Island to the south part of the county.

All the different religious denominations are represented here, and have good, commodious church buildings. We have 4 brick schoolhouses and a number of frame buildings, 4 national banks, 1 private bank. All the different fraternal societies are represented. Our gas plant will be in operation in the near future. Thirty brick business houses were erected last year and about 500 residences, some of them very handsome ones.

We need a cotton mill, furniture factory, and knitting mills.

Our bonded indebtedness is \$285,000, \$190,000 being municipality and \$95,000 school bonds. They were all issued for public improvements.

## STILLWATER.

Stillwater has one of the most beautiful town sites in northeastern Oklahoma.

The city has many beautiful homes, grounds well cared for and walks well kept up. The public buildings consist of court-house and city building. The court-house is located on a block of ground and is surrounded by a beautiful grove, which, with grass and walks, presents a very pleasing appearance. The city building is of brick, two stories high, fire station below and officers' and council chamber above.



Substantial churches to the number of eight are found, and lodges of all the leading orders. Masonic only own their rooms, others occupying rented quarters.

The public schools are of the best in the Territory. Four buildings of brick, with good grounds.

We have one of the best and up-to-date opera houses, of stone and brick.

The manufactures consist of 300-barrel mill and elevator, 2 cotton gins, ice plant, 2 brick yards, 2 elevators, and other small concerns.

Three national banks, with capital of \$100,000 and deposits of about \$500,000.

The city maintains a good electric-light and water system, for which the rates of consumers are about two-thirds the usual charge. The receipts pay all expenses and aid in the running expenses of the city. Most of the business is transacted in substantial brick buildings, of which there were eight constructed last year.

Stillwater is the seat of the Oklahoma Agricultural and Mechanical College and Experiment Station, located joining the city on the northwest. The grounds and farm comprise 400 acres, and the buildings are commodious and attractive.

The farm is stocked with all of the prominent breeds of horses, cattle, hogs, sheep, etc., and at all times of the year the various crops present a pleasing sight.

About 40 acres is in orchard and ornamental trees, and one can see the results of the different varieties and get the statistics showing which is most desirable for this climate.

#### TECUMSEH.

Tecumseh is the county seat of Pottawatomie County, located in the center of the county, surrounded by one of the most productive agricultural and fruit-growing countries in the Territory; offers special advantages from an educational standpoint, there being an excellent public school system and a good business college located at this point; a large, commodious two-story brick school house, and one prospective brick school building, and a three-story business college.

We have an electric-light plant in full operation. An electric railroad has been surveyed between this city and Shawnee, 5 miles distant, and is expected to be completed this fall.

We have a large cotton-seed-oil mill, employing about 28 hands; a distillery building just constructed, but not yet in operation; cold storage.

Two lines of railroad, Atchison, Topeka and Santa Fe and the Choctaw branch of the Rock Island; 5 church buildings and another handsome one in process of construction; 4 bank buildings; Odd Fellows and Masons are contemplating the erection of a two or three story building in the near future. Fourteen brick or stone business houses were erected during the last year, and another half block being contemplated. Over forty residences erected during the last year, a large number in course of erection, and a still greater number to be built this fall.

We need an ice plant, water works, canning factory, pressed-brick plant, cotton mills, and a first-class hotel. Raw material for the above industries are plentiful and easily obtainable.

Our bonded indebtedness is \$6,000 for public improvements.

#### WEATHERFORD.

Weatherford is well located in the southeastern part of Custer County on the Rock Island Railroad. Being surrounded by a large and fertile territory, its merchants enjoy a large trade. The soil of the surrounding country is varied according to its location on the upland or in the valleys, and adapted to the growing of all crops which can be raised in a mild climate. In addition to its location as a trade center, the Territorial Southwestern Normal School is located here and, consequently, it is the educational center for southwestern Oklahoma. This naturally makes it a very desirable residence city.

The city is bountifully supplied with water by means of a splendid system of waterworks, and this water is pure and free from all hardness. This, together with the elevation (1,700 feet), assuring cool nights, make it a most healthful city.

Among some of its most important manufacturing enterprises are the Weatherford Ice Company, supplying almost the entire western part of Oklahoma with

ice; Weatherford Milling Company, also supplying the greater part of western Oklahoma with flour and other milling products. This mill has a capacity of 250 barrels; 1 large elevator with a capacity of 110,000 bushels, and has just completed large steel storage tank with capacity of 50,000 bushels.

Weatherford has 2 cotton gins, bottling works, broom factory, 2 large elevators, 3 lumber yards, 2 large livery stables, 2 large hotels, natatorium, steam laundry, 4 large hardware and implement stores, 2 drug stores, and other merchants carrying large stocks of various kinds.

In addition Weatherford has a public school with 250 students, well located in a two-story brick school building and surrounded with grounds well improved, containing 3 acres; 5 church societies, which all own their own buildings; 2 national banks; waterworks system by which the entire business and residence parts of the city are supplied with water, and a fire department.

Among the many improvements within the past year are: Sidewalks on all the principal business and residence streets, extending water mains to include almost the entire city, 2 large brick mercantile buildings, 1 large frame mercantile building, 25 modern residences, the Southwestern Normal School building, costing over \$40,000, natatorium, and large steel storage tank for wheat with capacity of 50,000 bushels.

Weatherford has a bonded indebtedness of \$15,000, incurred for the purpose of building waterworks.

Weatherford needs electric lights, creamery, cotton-seed-oil mill, broom factory, opera house, boarding houses for students, and pressed-brick plant.

The importance of a modern broom factory in this city can not be overestimated, since the shipping facilities are good and the supply of raw material is all that could be desired.

#### COUNTIES DESCRIBED.

The following presents a brief description of each county in the Territory:

##### BEAVER COUNTY.

[Hon. Thomas Braidwood.]

The estimated population of Beaver County is about 15,000. Its area is 3,681,000 acres. The county is generally rolling. It is watered by the Beaver River, running from west to east through the entire center of the county, with creeks running north and south intercepting the rivers. They are numerous and the ground is broken and hilly at the heads of these creeks. The Cimarron River enters the northwest corner of the county, flows in an eastern direction for about 70 miles, thence north into Colorado; it enters the county again about 30 miles from the east end of the county and flows east and south. Numerous small creeks intersect the river from north and south. The country is rough with deep canyons at the head of these creeks.

The principal crops raised are cane, Kaffir corn, and some wheat has been raised in different parts of the county. An experiment is being made this year in raising cotton, corn, wheat, oats, and broom corn. The soil is of a deep sandy loam; on the flats or uplands is a deep black soil and very fertile. The annual rainfall is about 10 inches. This year we had about 20 inches, about 13½ inches having fallen in eleven days in June and July.

Apples, peaches, plums, and small fruit, such as grapes and berries, do well.

Stock raising has been the general industry of the county, but the homesteader has come in, filed on the land, and is trying to farm, with more or less success.

Very little timber in the county. Some cottonwood trees are found in the sand hills north of the Beaver and Cimarron rivers. It is not valuable for lumber. There is a good quality of sandstone found in various parts of the county. Limestone too soft for building purposes is found in places.

Guymon is the largest town in the county. It is situated near the geographical center of the county, and when the county is divided will be a county seat of the middle county. It is striving for a land office, with some show of success. Churches of all denominations are represented. It has good graded schools; has built a new two-room school building. The Guymon Herald is published weekly.

Beaver, the county seat, is located on the south bank of the Beaver River, has



a population of about 250 people, and has 3 papers—Beaver Herald, Beaver Journal, and the Advocate. Beaver has a two-room school building, employing 2 teachers; has an eight-month term of school. The Presbyterians built the present church about seventeen years ago, but it has been used by all denominations.

Kenton, in the extreme west end of the county, is the third largest town. It has a number of good, substantial buildings, schoolhouses and churches, and is a good trading point. It has a population of about 225. The Kenton News is published here.

Tyrone, Hooker, Goodwell, and Texhoma are all new towns, and are forging to the front, having churches, stores, schools, etc. Tyrone has two papers; Hooker, one. The other post-offices are Gate, Coin, Nye, Esther, Zelma, Cline, Sophia, Custer, Bluegrass, Logan, Lockwood, Clear Lake, Riverside, Wellborn.

There are numerous telephone companies organized, one line running from Liberal, Kans., to Beaver, Liberal to Grand Valley, with branch lines to Texas, using the Swedish-American instruments. Another line running from Liberal to Guymon, with private wire to different parts of the county. A line from Woodward to Beaver is under construction. The roads are in fair condition.

Artesian water has been developed lately. A large quantity of gypsum is found in all parts of the county. Coal and copper have been found in the western part, but not of a sufficient quantity to pay for working. Salt underlies a large area.

The Chicago, Rock Island and Pacific Railroad runs diagonally across the county from Liberal, Kans., to Texas, about 55 miles. The other railroads are on paper as yet.

There are 1,633 persons of school age, 63 school districts, and 1,438 quarter sections of school land in the county.

The court-house is valued at \$3,000, the safes and furnishings at \$1,500, the jail at \$500, and county grounds at \$500.

The total assessed valuation is \$1,671,046.

#### NEWSPAPERS PUBLISHED IN THE COUNTY.

*Weekly*.—Beaver: Herald, Journal, Advocate. Guymon: Herald. Kenton: Cimarron News. Hooker: Advance. Tyrone: Observer, Leader.

#### BLAINE COUNTY.

[A. C. Seeley.]

Blaine County has an area of 595,160 square acres, is a part of the Cheyenne and Arapahoe, Wichita, and Caddo countries, with a population of about 18,000. The topography is generally level, except a range of the celebrated gypsum hills running through the county from northwest to southeast.

The county is well watered by the Cimarron, North and South Canadian rivers and their tributaries, and numerous springs of fine, soft water. Fine, soft well water may be obtained in most parts of the county at a depth of from 30 to 100 feet.

The average rainfall compares favorably with adjoining territory. The soil is of a rich, fertile character, generally dark, sandy loam, well adapted to the raising of wheat, rye, barley, oats, corn, Kaffir corn, broom corn, cane, cotton, alfalfa, all pitted fruits, berries, and all kinds of vegetables.

Native grasses consist in most part of blue stem and buffalo grass, which gives the stock excellent feed for both summer and winter.

There is timber in different parts of the county, consisting of black jack, post oak, burr oak, cedar, walnut, and hackberry, sufficient for fencing and furnishing a large part of the necessary fuel.

Numerous large deposits of gyp dirt are found, some of which are being utilized by large cement mills, of which three are now in operation with a daily capacity of about 15 carloads. A 7-foot vein of gyp rock, closely resembling marble, and covering an area of several square miles, is located in the center of the county, and is valuable as a building rock as well as for the manufacture of a high grade of cement plaster. Other rock is found in various parts of the county in ample quantity and good quality for foundations, walls, etc. Indications are good for gas and oil, but no extensive developments have been attempted.



Large flour mills are established at Watonga, Geary, Okeene, and Hitchcock; cotton gins at Watonga, Geary, and Greenfield; salt factories, aggregating a 2,500-barrel daily capacity, at Ferguson.

Watonga is the county seat, and is located in the center of Blaine County. It is surrounded by a fast developing agricultural and manufacturing community, and has an abundance of fine soft water. It has two railroads, the Rock Island and Choctaw Northern. Watonga and Geary each have a system of municipal waterworks.

Excellent graded schools are maintained at Watonga, Geary, and Okeene, and district schools in each of the remaining 98 districts.

Post-offices are established at Bond, Cainville, Cantonment, Carleton, Cherryvale, Cooper, Dillon, Dyke, Ethel, Etna, Emanuel, Ferguson, Geary, Greenfield, Hatchett, Hitchcock, Homestead, Judson, Manese, Max, Okeene, Seay, Udora, Watonga, and Winnview, from which rural free delivery routes are established as follows: Geary, 1; Hitchcock, 3; Okeene, 4; Watonga, 1.

Independent telephone systems are established at Watonga, Geary, Okeene, and Hitchcock, which are connected with long-distance phones to all parts of the Territory.

There are 4 lines of railway in the county, the Chicago, Rock Island and Pacific, and Choctaw, Oklahoma and Gulf, running the entire length from north to south; the Frisco, entering the northeast corner and running in a southwesterly direction across the county, and the Kansas City, Mexico and Orient across the northwest corner.

The county roads and bridges are in fair condition for a new country and are improving year by year. Public interest is keenly alive in these matters.

There are 1,633 persons of school age, and 226 quarter sections of school land in the county.

The value placed on the court-house is \$3,000; jail, \$5,000; safes and furniture, \$1,000, and the grounds on which the buildings are located \$15,000. The bridges in the county are valued at \$20,000. The assessed valuation of all property is \$2,108,627, as equalized by Territorial board.

#### FINANCIAL STATEMENT OF COUNTY.

Total amount expended for county purposes-----	\$57,920.45
Amount of county warrants outstanding-----	2,194.26
Total aggregate indebtedness of county-----	44,634.46
Total amount of taxable property-----	2,161,518.00
Amount of floating indebtedness (judgments)-----	440.20
Amount of bonded indebtedness-----	42,000.00
Outstanding indebtedness of all kinds-----	44,634.46
Amount of sinking fund on hand-----	8,388.41
Amount of taxes collected-----	114,744.36
Tax rate levied, 21 mills.	

#### NEWSPAPERS PUBLISHED IN THE COUNTY.

*Weekly*.—Watonga: Republican, Herald. Geary: Bulletin, Journal. Hitchcock: Vanguard. Okeene: Eagle, Deutscher Anseinger. Homestead: News. Ferguson: Bugle. Longdale: Ledger.

#### CADDO COUNTY.

[William Reece.]

Estimated population of the county, 26,240. Area is 951,341 square acres. Per cent of surface level, 0.25; rough, 0.25; hilly, 0.50. Names of rivers, Washita, Canadian, Cache. Names of smaller streams, Willow, Cobb, Deer, Swan Lake, Jenny, Cawkey, Culver, Mills, Apache, Bill, Delaware, Sugar, Spring, Keechi, Bogoy, Bear, Canon, Tonkawa, Camp, Spivey, and others.

Agricultural opportunities, the very best for diversified farming. Character of soil, sandy and sandy-clay loam. Colors of soil, black, light red, and dark red. Fertility, best in the world.

Annual rainfall, 32 inches. Altitude of Anadarko, the county seat, 1,172.4 feet; longitude, 98° 40'; latitude, 35°. In latitude with Memphis, Tenn.; in longitude with Ellsworth, Kans.

Varieties of fruit most successful, small fruits of all kinds, peaches, apricots, apples, plums, pears, and cherries.

The county is best adapted for grazing and agriculture. The crops which are successfully raised are corn, wheat, oats, cotton, barley, alfalfa, and broom corn.

Washita Falls at Anadarko will furnish power for large manufacturing establishments.

There are thousands of walnut logs being shipped from the Territory from 1 to 3 feet in diameter; oak, 1 to 2 feet in diameter; black jack the best-known fuel; other kinds, pecan, sycamore, elm.

Building stone, plenty of fine quality. Deposits of limestone, several large deposits.

Names of cities and towns in order of population: Anadarko, Apache, Bridgeport, Hydro, Fort Cobb, Hinton, Binger, Cement, Lookeba, Carnegie, Laverty, Sickles, Verden.

Manufacturing establishments, planing mill, broom factory, flouring mills; cotton gins, 12. Number of post-offices, about 30. Miles of railroad, about 160. Miles of telephone lines, about 160. All the towns in the county are connected by telephone.

Rural free-delivery routes from the following offices: Fort Cobb, Anadarko, Hydro, and Binger.

Condition of public roads, good. Bridges, many steel.

Undeveloped resources, oil, gas, cement.

Number of furnished school rooms, 160.

The number of persons of school age is 6,295, and the number of quarters of school land in the county is 544.

The total assessed valuation is \$2,864,879.

One block of ground has been set apart for county buildings, on which are now located a temporary frame court-house, valued at \$1,000, and a jail with steel cells, valued at \$5,500. The safes and other furnishings are valued at \$1,500 and the bridges in the county at \$30,000.

#### NEWSPAPERS PUBLISHED IN THE COUNTY.

*Daily*.—Anadarko: Democrat.

*Weekly*.—Anadarko: Tribune, Democrat, Times, Life. Hydro: Review. Bridgeport: News, Free Press. Hinton: Record. Binger: Journal. Cobb: Record. Carnegie: Herald. Apache: Review, World. Cement: Courier.

#### CANADIAN COUNTY.

[E. J. Simpson.]

Area of county is 576,590 square acres. This county is conceded to be one of the best agricultural counties of Oklahoma. It takes its name from the Canadian River, both forks of which traverse the rich bottom lands. The Canadian Valley, a stretch of country of which El Reno is the center, is regarded as one of the richest districts of agricultural land in the Southwest. The lands are rolling. The soil varies from a red sandy loam to a black loam of unusual richness.

The average annual production of wheat reaches 2,500,000 bushels, while oats, corn, cotton, and all kinds of grain and garden products grow in great profusion.

Peaches, apples, and grapes grow everywhere, and the vegetable productions attain the wonder proportions.

Buffalo, blue-stem, and 12-foot prairie grasses are indigenous.

Elm, cottonwood, oak, and walnut timber is plentiful.

Besides the two forks of the Canadian, innumerable creeks and lakes add to the beauty of scenery and fertility of soil.

The rainfall is plentiful, being of the same general average as Oklahoma County. The general altitude of the county, being some 1,300 feet above the sea level, renders the climate equable, the summer nights being particularly cool and pleasant.

Immense deposits of sandstone are found in the western portions of the county and is regarded as very desirable for building purposes. Great beds of cement abound, and the cement mills of the county equal those of any other country.

The county has a population of from 19,000 to 20,000.

Churches and schools are found in every school district. All fraternal orders flourish in every town and city.

El Reno is the county seat and has a \$50,000 court-house. The other towns and cities are Yukon, Okarche, Mustang, Piedmont, Union, Richland, Calumet, and Cereal.

Rural free delivery radiates from El Reno, Yukon, Okarche, and Cereal, while preparations are being made to extend this great postal system from the other points named.

The Missouri and Kansas, Topeka and El Reno, and Consolidated are the three exchange and toll systems of telephone already established.

Public interest in the good-roads movement is being agitated.

The railways traversing the county are the Rock Island, the Choctaw, the Frisco, and the St. Louis, El Reno and Southwestern.

The county is agricultural, but thousands of graded cattle, horses, and hogs are raised.

Indications of oil and coal are plentiful, and improvement and development companies are now at work along these lines.

There are 6,027 persons of school age, 97 school districts, and 210 quarter sections of school land in the county.

The total value of all property returned by the assessor is \$3,429,000.

Court-house .....	\$50, 000
County jail and steel cells.....	2, 500
Grounds on which above are located .....	9, 000
Safes and furniture .....	15, 000
All county bridges.....	175, 000
County poor farm.....	5, 000
Stock, implements, and other property on poor farm.....	700
Old court-house site.....	2, 800

Total value of all county property ..... 260, 000

#### NEWSPAPERS PUBLISHED IN THE COUNTY.

*Daily*.—El Reno: Evening Bell, Democrat, American.

*Weekly*.—El Reno: American-News, Democrat, Globe-Bell, Volksblatt (German). Okarche: Times. Yukon: Sun. Mustang: Mail. Piedmont: Press.

#### CLEVELAND COUNTY.

[R. J. Morgan.]

Estimated population of Cleveland County, 17,500. Area is 348,000 square acres, located in the southern part of Oklahoma, the South Canadian River and Chickasaw Nation forming the boundary line on west and south. Eastern portion rolling, with some timber, western portion smooth prairie.

*Rivers*.—South Canadian forms our western and southern boundary, giving us about 75 miles of valley along this river, while Little River traverses from the northwest part to the east line of the county with many tributaries, of which most are fed by springs.

*Agricultural opportunities*.—They are good; all land is utilized either for farming or stock raising, and possibly not to exceed one-half has been put in cultivation.

*Soil*.—Mostly sandy loam, western portion of county dark; eastern, red. All very productive. Annual rainfall, 34 inches.

*Fruit*.—Apples, peaches, plums, pears, grapes, cherries, blackberries, raspberries, strawberries, all do well.

*Stock raising*.—In addition, the native wild grasses and alfalfa and bermuda grasses have been very successfully grown, and one will eventually find most of our pastures in these tame grasses. They have passed the experimental stage in this county, and farmers who have put out the tame grass have been well paid for their trouble and find it a success.

The county is well watered; good water is found at about 30 to 40 feet the county over; many running small streams; no water power; quite a good many springs.

*Native trees*.—Red and white oak, pecan, walnut, elm, cottonwood, hackberry, persimmon, wild plum, red and black haw. We do not consider it of



much commercial value for lumber, although there are several sawmills in the county and much bridge and many other heavy timbers are manufactured.

*Building stone.*—We have a first-class sandstone in some portions of the county that is good for building purposes; no other kind found.

Largest town, Norman. In addition to the State University it has very good public schools, also Catholic convent school.

Manufacturing establishments: Cotton-seed oil mill, nine cotton gins, ice factory, flour mill. Twenty-one post-offices in the county, with four rural free delivery routes from Norman.

Two telephone systems, Bell phone and the Independent, covering nearly all points in the county from Norman. Country roads generally good, with all streams well bridged. The good-road movement strongly advocated.

No development for coal, oil, or gas has been made; indications for oil and gas are good.

Our county is strictly agricultural. We raise good corn, wheat, oats, and cotton, also alfalfa, five of the principal crops that are grown in the world; all can be found growing on the same farm, and we claim there is a very small portion of the world where this can be done successfully. All kinds of fruit and vegetables grow in abundance. The county is settled by a good class of people, with schools and churches all over the county, with splendid water, extremely healthy, and sufficient rainfall; the people are very prosperous.

There are 6,914 persons of school age, 68 school districts, and 122 quarters of school land in the county.

#### NEWSPAPERS PUBLISHED IN THE COUNTY.

*Weekly.*—Norman: Transcript, Democrat-Topic, Voice. Lexington: Leader.

*Monthly.*—Norman: Reform Herald.

*Scintimonthly.*—Norman: University Umpire, University News Letter, Baptist Bulletin.

*Quarterly.*—Norman: University Bulletin.

The assessed valuation for 1904 is \$2,213,228, as equalized by Territorial Board of Equalization. Court-house grounds are valued at \$6,000. safes and court-house furniture at \$5,000, and the jail at \$2,500. The bridges in the county are valued at \$40,000.

#### FINANCIAL STATEMENT OF COUNTY.

Total amount expended for county purposes .....	\$51, 269. 44
Total aggregate indebtedness of county .....	76, 500. 00
Total amount of taxable property .....	2, 320, 879. 00
Amount of bonded indebtedness .....	76, 500. 00
Outstanding indebtedness of all kinds .....	76, 500. 00
Amount of sinking fund on hand .....	4, 284. 50
Amount of taxes collected .....	47, 961. 40
Rate of tax levied, 17.5 mills.	

#### COMANCHE COUNTY.

[Charles B. Selby.]

The population of Comanche County is 27,000, and it has a total area of 1,845,000 square acres.

As to topography, the southern part is level, the northwestern mountainous and rough, and the northeastern part gently undulating, abounding with streams fed by everlasting springs and skirted by timber.

The timber, which grows mostly along the streams, is walnut, oak, cottonwood, elm, and pecan. Some is sawed into lumber by local sawmills in the bottoms.

The Red River bounds the county on the south, and the north fork of the same stream on the west. On the northeast the Little Washita passes through the corner of the county. There are many other streams—Big Beaver, Little Beaver, Cache Creek, Cow Creek, Slough Creek, Bluff Creek, Wolf Creek, and some smaller ones—all of which trend to the southeast and empty into the Red River.

Agricultural opportunities are excellent; corn produces from 50 to 100 bushels per acre, cotton one-half to one bale per acre, and alfalfa does splendidly in the

northeastern part and very well over the east half of the county. Potatoes are grown in the eastern part as fine as any in the irrigated potato sections. Vegetables and fruits do particularly well in the eastern part.

In the eastern half of the county water is abundant and easily obtainable in numerous springs or in wells of shallow depth. In the western half water is deeper and not so good. This section is best adapted for wheat.

The soil ranges from a dark loam on bottoms to reddish sandy on uplands in the eastern portion. In the northeastern part it is sandy and rather hilly, but exceedingly fertile. In the western half the soil is lighter colored but closer and much drier.

The rainfall in 1903 was 18.56 inches. This year in May there was 3.80, June 13.70, July 13.10.

Many farmers are giving attention to thoroughbred stock, particularly cattle and hogs.

The native grasses are blue stem in the northeastern part and mesquite in the western half. There are fine hay lands in the eastern half.

In the northwest there are fine stone deposits, granite, and building stone in abundance. Particularly is this true in the vicinity of Fort Sill, where the Government has constructed all of its buildings of stone. There is no stone in the eastern or northeastern part of the county.

The largest town is Lawton, which is the county seat. Other towns and their population are Walters, 1,500; Temple, 1,200; Waurika, 1,000; Frederick, 1,500; Indianola, 200; Cache, 700; Sterling, 400; Elgin, 200; Fletcher, 150; Chattanooga, 300, and Faxon, 400.

All towns have good schools. Lawton has 2,000 school children and 30 teachers. Other towns from 2 to 7 teachers. Every school district has good school buildings and school was maintained last year.

Manufacturing industries are not well developed. Lawton has 3 cotton gins; Frederick, 2; Walter, 2; Temple, 1; Hastings, 1; Waurika, 1; Sterling, 1, and Elgin, 1.

There are 2 telephone lines, which connect with all towns in the county, and there is a rural free delivery operating out of Lawton.

Our country roads are in fair condition, and about half of the streams bridged.

Gas and oil have been found at Lawton and Elgin.

The Rock Island Railroad has 3 lines out of Lawton and the Frisco 2. The Rock Island also passes along the eastern border of the county.

The assessed valuation of the county is \$4,557,460. The county court-house is valued at \$3,000 and the jail and steel cells at \$2,500. One entire block has been reserved for permanent county buildings in the city of Lawton, which is the county seat. The furniture now in use is valued at \$2,000 and the bridges at \$20,000.

There are 9,508 persons of school age and 192 school districts in the county. There are also 1,016 quarter sections of school land under lease.

#### NEWSPAPERS PUBLISHED IN THE COUNTY.

*Daily*.—Lawton: Democrat, News-Republican.

*Weekly*.—Lawton: News-Republican, Democrat, Constitution. Sterling: Star. Frederick: Enterprise. Walter: Leader, Democrat. Temple: Tribune. Hastings: News. Waurika: News. Cache: Journal. Chattanooga: News. Faxon: Star.

#### CUSTER COUNTY.

[W. L. Baldrige.]

Population, 18,000. Area, 642,160 square acres. Topography, rolling prairie, with range of hills skirting the two principal streams—the South Canadian River, which touches the northeast corner of the county, and the Washita, traversing the southwest portion from west to southeast.

Custer County has fine agricultural land, with splendid opportunities for development of all branches of agriculture being taken advantage of by an industrious and progressive class of farmers. The main body of the county lies between the famous Washita and South Canadian rivers, embracing some of the richest lands of the Territory. No section affords better agricultural opportunities. As a class the farmers are progressive, many of them owning



finely improved farms, elegant residences, good barns, well stocked and well cultivated. The most successful farmers have learned that a diversity of crops insures the most satisfactory results, the climate and soil being especially adapted for diversified farming. The principal products raised for market are wheat, oats, corn, Kaffir corn, milo maize, broom corn, cotton, and alfalfa. The soil is prolific in the production of all kinds of vegetables. No clay soil is found in the county, but is wholly either of the black or the red sandy loam, the latter being regarded as the most productive, hence the most desirable. The soil is of great depth, and a mixture of sand prevails universally in the county to a sufficient extent to make it work easily and retain the moisture. No more desirable soil is to be found for agricultural purposes.

The annual rainfall is shown by the Government reports to be 28 inches. With the county's great diversity of crops a total failure is unknown and usually all crops are successful. Cotton, corn, broom corn, and alfalfa are raised extensively, and invariably make an abundant yield.

Both the soil and the climate are well adapted to fruit growing. This branch of agriculture is being developed to a considerable extent. Many excellent orchards and vineyards are found in the county. Peaches, apples, apricots, plums, cherries, pears, and all the smaller fruits thrive.

While the natural conditions in Custer County are favorable to stock raising, the county having been originally well grassed with buffalo and blue stem, this industry has largely given way to agriculture. However, stock raising is destined to be a leading source of wealth. Many farmers are giving attention to the raising of blooded stock.

The county is traversed by numerous flowing streams and many springs of pure water are found in all parts of the county. The principal streams are: South Canadian and Washita rivers and Deer, Beaver, Turtle, and Bernity creeks.

Timber is found in considerable quantities along the streams, furnishing shelter for stock and fuel for household use. The varieties are the elm and cottonwood, with some walnut and hickory.

Extensive deposits of red sandstone are found in portions of the county. This is a fine quality of stone and is especially suitable for building purposes. As soon as accessible by railroads, rich quarries may be expected to be developed.

The principal towns are: Weatherford, Arapahoe (the county seat), Thomas, Custer City, and Clinton.

The school and church facilities are first class. The Southwestern Normal, which is one of the splendid Territorial institutions, is located at Weatherford. Thomas boasts of a fine school building, thoroughly equipped with all modern appliances. A handsome \$12,000 brick school building is being erected at Arapahoe. Both in town and country the schools are of the best. From an educational standpoint Custer County offers exceptional opportunities.

Cotton gins are located at all the leading towns, both Weatherford and Arapahoe being supplied with two first-class plants. At Thomas is located one of the largest and best flouring mills in the Territory, being of 500 barrels capacity. Weatherford also has a good flouring mill, as well as an ice plant. A first-class cotton-seed oil plant is in process of construction at Clinton.

Every community is within easy access of a post-office, or supplied with rural free delivery. Weatherford, Thomas, Arapahoe, Custer City, Clinton, and Butte are connected by telephone and supplied with local exchange systems, owned and operated by the Southwestern Telephone Company. The lines are being extended to all parts of the county, and many of the farmers are now in direct touch with the outside world by means of the telephone.

Rural routes have been established in the county as follows: Three out of Weatherford, two out of Arapahoe, two out of Custer City, one out of Thomas, and one out of Indianapolis.

Country roads are subject to frequent damage by washouts. However, all streams and canyons are well bridged, and the citizens of the county are public spirited with regard to road improvement. On account of heavy rains the dirt work requires constant attention.

The county is rich in gypsum deposits, which resource is in an undeveloped state.

The evidences that gas and oil exist are numerous. Some mineral claims have been filed with a view to their development in the near future.

Of all the great resources of Custer County perhaps those which contribute most to the county's wealth and prosperity are her cotton, corn, and broom-corn crops, which are raised in large quantities.



The county has two railroads, viz, the St. Louis and San Francisco crossing the county from northeast to south central, and the Choctaw, Oklahoma and Gulf crossing the southern portion of the county from east to west.

The school population is 5,678, the number of school districts 112, and the number of quarter sections of school land in the county is 290.

The property owned by the county is valued as follows:

Court-house .....	\$3, 500
Safes and furniture.....	2, 000
Real estate.....	3, 000
Jail .....	3, 000
Bridges .....	30, 000

## FINANCIAL STATEMENT OF COUNTY.

Total amount expended for county purposes .....	\$39, 089. 48
Amount of county warrants outstanding.....	2, 909. 77
Total aggregate indebtedness of county.....	41, 709. 77
Total amount of taxable property.....	2, 570, 927. 00
Amount of bonded indebtedness.....	38, 800. 00
Outstanding indebtedness of all kinds .....	41, 709. 77
Amount of sinking fund on hand.....	388. 88
Amount of taxes collected.....	88, 086. 14
Rate of tax levied, 14.5 mills.	

## NEWSPAPERS PUBLISHED IN THE COUNTY.

*Weekly*.—Arapaho: Bee, Clarion, News. Weatherford: Republican, Democrat. Thomas: Tribune. Custer: Courier. Clinton: Chronicle. Indianapolis: Bee. Independence: Herald. Butler: News.

## DAY COUNTY.

[C. F. Stephens.]

Estimated population, 8,500. Area, 666,000 square acres. Topography of county, surface varied. Along the Canadian River the country is very broken from the western border to the eastern border of the county. This broken country extends from 2 to 4 miles from the river. About one-half of county is fine for agriculture. Other half broken by small streams and sand hills. Washita River also waters southwestern portion of county.

The agricultural portion is fast reaching a high state of cultivation. Soil is deep, dark, sandy loam. There is very little red soil, only in eastern portion, and all is fertile.

Rainfall in 1903, first year of Government record at Grand, we had 11 inches precipitation, all in crop season. First half of 1904 we have 16 inches.

Fruits not thoroughly tested. Peaches, plums, grapes, and pears fine. Apples are just beginning to bear, and it is the general supposition that they will be successful.

Stock raising with agriculture is successful. Stock raising alone not profitable on account of limited range.

*Water*.—Canadian and Ouachita rivers. Many of their tributaries are fed by springs, furnishing sufficient water for power. A gin is now completed on Little Robe Creek with water power. One at Grand is to be erected soon and to be run by a spring, estimated at 40 horsepower. (The estimate is not overdrawn, in my opinion.) Two gins are all that I know of in operation now; several more contemplated.

Timber is scarce away from the streams. Walnut, cottonwood, and persimmon are the principal varieties. Very little is left suitable for lumber.

*Stone*.—Sandstone plentiful along the streams. Also gyp rock in nearly every portion of the county outside of the agricultural lands. Sandstone is good for building. Some have used gyp successfully.

Grand is the largest town and does not exceed 100 persons. Broom factories are numerous.

The post-offices number 26, with some five or six applications for new ones.

There is a telephone line from Grand to Gage.

*County roads.*—Roads good except in sandy districts, which include about three Congressional townships. Bridges little needed. No county bridge in the county. But little public interest in good-roads movement.

*Undeveloped resources.*—Gyp is abundant, much in crystalized form. Oil has been found in several places, and a company formed to prospect near Grand. Successful products, corn, broom corn, cotton, wheat, milo maize, Kaffir corn.

A railroad, the Santa Fe, passes through the northwest corner of our county, and has about 3 miles of track in the county. Facilities poor indeed.

There are 69 districts, 67 of which have schools; most of them buildings.

There are 2,288 persons of school age, and 240 quarter sections of school land in the county.

The assessed valuation of all property is \$481,547.

The value of county buildings, furniture, jail, and grounds is placed at \$1,500.

#### FINANCIAL STATEMENT OF COUNTY.

Total amount expended for county purposes	\$12,717.55
Amount of county warrants outstanding	1,583.58
Total aggregate indebtedness of county	21,764.07
Total amount of taxable property	519,756.00
Amount of floating indebtedness	380.49
Amount of bonded indebtedness	19,800.00
Outstanding indebtedness of all kinds	21,764.07
Amount of sinking fund on hand	1,839.06
Amount of taxes collected, including Territorial, county, township, and school-district tax	22,410.52
Rate of tax levied for county purposes, 32.5 mills.	

#### NEWSPAPERS PUBLISHED IN THE COUNTY.

*Weekly.*—Grand: Republican-Progress, Canadian Valley Echo. Arnett: Free Homes.

#### DEWEY COUNTY.

Dewey County is located in the western part of Oklahoma. It is well watered, as the Canadian River enters it from the west and passes through 16 of the 28 townships, finally leaving the county at its southeastern corner. There are also many small streams and springs, which furnish abundance of good water for stock. In the northeastern part of the county the north fork of the Canadian River runs in an easterly direction and the valley surrounding it is exceedingly fertile.

Taloga is the county seat and the principal town in the county. It is located a little north of the center, some distance from the railroad. Other towns in the county are Beement, Cestos, Ingleton, Seiling, Pollan, Sparta, Horn, Riley, Guy, Glenwood, Muncie, Fountain, Harper, Galva, Hurley, Oakwood, Stineton, Butte, Jacks, Oakley, Roseland, Putnam, Raymond, Lenora, Bloomfield, and Carnago.

The railroad facilities have not been very good in the past, as the Frisco passes through the southeastern corner of the county, but the Orient, which is now being completed, will furnish several markets along its route through the county.

Dewey County has been quite a stock raising country, but is now pretty well taken up by the homesteader, and the success which has crowned the efforts of the agriculturists will soon place it among the best farming counties on the west side.

Fruit does well, and many farmers have planted large orchards and vineyards.

In some localities fine building stone is found. The immense deposits of gypsum in the southwest half of the county constitute a mine of wealth which is as yet undeveloped.

The total area of the county is 637,000 square miles, and the population is 12,057.

The number of persons of school age is 4,770, and the number of school districts 92, while the number of quarter sections of school land is 259.

The assessed valuation as equalized by the Territorial board of equalization is \$1,012,171.

The county property is valued as follows:

Court house -----	\$6, 000
Safes and furniture -----	1, 000
Jail -----	2, 000
Grounds -----	600
Bridges -----	4, 000
Total -----	13, 600

#### NEWSPAPERS PUBLISHED IN THE COUNTY.

*Weekly*.—Taloga: Times, Advocate. Seiling: Guide. Cestos: Reporter. Lenora: Leader. Putnam: Pioneer.

#### FINANCIAL STATEMENT OF COUNTY.

Total amount expended for county purposes -----	\$26, 230. 00
Amount of county warrants outstanding -----	388. 28
Total aggregate indebtedness of county -----	34, 788. 28
Total amount of taxable property -----	979, 067. 00
Amount of bonded indebtedness -----	34, 788. 28
Amount of sinking fund on hand -----	3, 623. 32
Amount of taxes collected -----	28, 662. 89
Rate of tax levied, 33 mills.	

#### GARFIELD COUNTY.

[Harry Hornor.]

The population of Garfield County is about 30,000. Its area is 640,000 square acres. The colored population is considerably less than 1 per cent, while probably 85 per cent of the entire population are native-born Americans.

The surface of the county presents a gently rolling plain, as a rule, with some rough lands or "breaks" on the headwaters of the different streams. No rivers flow through Garfield County, but it is well watered by numerous creeks, some of which are very large.

The soil is mostly a deep sandy loam, varying in color from black to a reddish or chocolate hue. It is very fertile.

The annual rainfall varies from 34 to 40 inches, usually well distributed over the growing season.

Oklahoma ranks right at the front as a fruit producer. There are very few varieties which do not do well here, while apples, peaches, plums, cherries, pears, apricots, grapes, and berries of all kinds reach absolute perfection, both in size and flavor. The soil and climate seem peculiarly adapted to the production of fruits of fine flavor.

It is a natural stock-raising region, but a very great percentage of the land being tillable most of it is in cultivation. However, in the rougher sections the luxuriant native grasses are still in evidence, and thousands of cattle graze on these the year around. During the winter months the wheat fields furnish ever-green pasturage for many thousands more.

It is not what would be called a timbered county. There is more or less timber along the streams, with native oak groves, some of them several thousand acres in extent. Much of the timber is of value for lumber.

Building stone of a fair quality is found in some sections, but in most parts there is no stone or rocks of any kind.

The principal town in Garfield County is Enid, the county seat. Other towns and their population are: Waukomis, 900; Garber, 500; Hunter, 400; Kremlin, 300; Lahoma, 300; Drummond, 300; Douglas, 250; Fairmont, 200; Covington, 200.

The school facilities are excellent, and, considering the age of the county, wonderful. The school system is kept at the highest point of efficiency, and many good buildings have been erected.

Enid is developing into a manufacturing and wholesale city. Here are located a large number of prosperous manufacturing establishments, among which are: Flouring mills, employing 75 people; a steel-bridge plant, employing 40 to 80 people; brick plant, employing 75 people; cigar, broom, candy, and other factories, including machine shops, employing hundreds of men. Also the roundhouse, division headquarters, and repair shops of the Frisco



and Rock Island railroads are located here, the total number of men on the pay roll of the different railroads being 700.

The telephone system is superb. The Independent system is used for local and long-distance purposes, while the Bell long-distance wires, reaching all the important cities of the United States, are in active operation.

Many rural free-delivery mail routes have been established in the past year, and a great proportion of the farmers get their mail daily. These rural routes start from nearly every railroad town in the county.

The public roads are usually in good condition, and require very little work and expense to keep them so. Most of the streams are bridged with steel bridges.

The many lines of railroad crossing the county in all directions afford unexcelled shipping facilities. It is impossible to get farther than a few miles from a railroad town or shipping point in Garfield County.

#### NEWSPAPERS PUBLISHED IN THE COUNTY.

*Daily*.—Enid: Wave, News, Eagle.

*Weekly*.—Enid: Eagle, Democrat, Wave, Events, Echo, Farmer and Stockman, Post. Waukomis: Hornet. Garber: Sentinel. Hunter: Enterprise. Lahoma: Sun. Kremlin: Times. Carrier: Monitor. Douglas: News. Drummond: Herald. Covington: Record.

*Monthly*.—Enid: Oklahoma Christian. Waukomis: Farmers' Elevator.

There are 465 quarters of school land, 8,365 persons of school age, and 122 school districts in the county.

The value of county property is as follows:

Court-house .....	\$4,000
Safes and furnishings .....	1,500
Jail .....	500
Grounds .....	25,000
Bridges in county .....	50,000
Poor farm .....	6,500
Total .....	87,500

Assessed valuation as equalized by Territorial board, \$4,765,734.

#### FINANCIAL STATEMENT OF COUNTY.

Total amount expended for county purposes .....	\$74,413.44
Amount of county warrants outstanding .....	3,882.18
Total aggregate indebtedness of county .....	49,882.18
Total amount of taxable property .....	4,046,164.00
Amount of bonded indebtedness .....	46,000.00
Outstanding indebtedness of all kinds .....	3,882.18
Amount of sinking fund on hand .....	1,693.87
Amount of taxes collected .....	206,489.70

Rate of tax levied, 13.4 mills.

#### GRANT COUNTY.

[T. J. Palmer.]

Grant County is located on the north line of the Territory, adjoining Kansas, about midway east and west and south of the city of Wichita, Kans., 65 miles. It contains 672,000 acres, of which 75,335 acres are reserved as school and public-building lands.

The topography of the county is principally undulating, there being very little waste land in the county, except along the Salt Fork, which enters the county on the mid-western portion and runs southeasterly through it, and the soil adjacent to this stream is sandy and affords excellent opportunities for stock, as alfalfa and other food products grow prolifically upon it. The other streams in the county are Deer Creek on the east, the Polecat, Osage, and Pond Creek near the center, and Crooked Creek in the west portion, all of which have their sources in the north part of the county and run southeasterly to the Salt Fork.

The soil is varied, being black in the northeast, with a tendency toward red in the northwest and inclining to a sandy loam as we near the Salt Fork. It is very fertile and productive. All kinds of crops grow abundantly. Wheat

has been the principal product, though as the land is becoming more valuable there is a great tendency toward stock and food products therefor, such as corn, alfalfa, millet, cane, etc. Cotton grows prolifically, but little is raised in the county. Fruit does well, and all kinds are grown which are indigenous to the temperate zone. Fruit and shade trees grow rapidly, the limbs making a growth of 3 to 4 feet in a season. The county is originally prairie, but groves and orchards already dot it over. Though the county is but 11 years old, being first settled September 16, 1893, the prairie features are well-nigh gone. Cherries, peaches, plums, apples, and small fruits do well.

Stock raising must eventually become the vocation of the people. Stock is quite free from all diseases common in the Middle and Eastern States. Dairying is recently becoming quite general. Experiments show that the grasses of the older States grow well, clover and timothy doing nicely.

The county is reasonably well watered, the depth of wells being from a few feet to 60 feet, and all kinds and qualities of water obtained, there being a tendency toward saltiness in the shallow wells. There is little native timber, except along the streams, where elm predominates.

There are stone deposits in the northeast portion of the county suitable for building purposes.

The population, estimated at 20,000, is from all the States of the Union and some countries of Europe. There are only 3 negro families in the county, not that there is any prejudice against them, but it is not congenial and nothing to attract them.

All religious demoninations are represented. There are no large cities in Grant County, Pond Creek in the south and Medford near the center of the county being the largest. There are a number of small towns, excellent trading points; those on the Rock Island Railroad are Renfrow, Medford, Jefferson, and Pond Creek; on the Santa Fe are Manchester, Gibbon, Wakita, Clyde, Medford, Numa, and Deer Creek; on the Frisco are Eddy, Lamont, and Salt Fork. The population of these towns range from 100 to 600. All the towns are post-offices.

The only manufacturing establishments of note are flouring mills at Medford and Pond Creek. A machine shop for the manufacture of a wire-fence tool has recently been established at Medford.

The county is a network of telephones. The Oklahoma and Kansas Telephone Company, with headquarters at Medford, reaches all towns in the county and has a large number of rural routes. The Missouri and Kansas has a long-distance line through the county along the Rock Island Railway, and there are several independent rural lines.

The rural free-delivery postal system is well established in the county, there being routes from nearly all offices on the railroads.

Grant County has grown rapidly in wealth, as is shown by the assessed valuation, which is about 40 per cent of actual cash values. Lands are not excessively high, ranging from \$6 to \$40 an acre, according to improvements and location.

School facilities are as good as in any State in the Union. In Medford and Pond Creek high schools are maintained, open to all. Through the county are schools convenient to all children.

In all the towns churches are established and all denominations represented. Several churches are maintained in the country. The churches most numerously represented are Methodist, Baptist, Christian, Presbyterian, and Congregational. The Catholics have churches, but no resident priests.

Opera houses may be seen in the larger towns, where the better classes of entertainments are given. Medford boasts one of the best in the Territory.

Politically the county is quite evenly divided between the Republicans and Democrats, with the former slightly in the ascendancy.

There are 13 newspapers published in the county, mostly political, thus evidencing the intelligence and progress of the people.

The number of persons of school age is 6,292, the number of school districts 124, and the number of quarter sections of school land in the county is 480.

The value placed on the county buildings and other property is as follows:

Court-house .....	\$7, 000
Jail .....	2, 000
Safes and other furnishings.....	3, 000
Court-house grounds.....	20, 000
Bridges in county.....	40, 000
Assessed value of all property as equalized by Territorial board.....	4, 765, 734

## FINANCIAL STATEMENT OF COUNTY.

Total amount expended for county purposes-----	\$40, 000
Total aggregate indebtedness of county-----	29, 000
Total amount of taxable property-----	3, 000, 000
Amount of bonded indebtedness-----	29, 000
Outstanding indebtedness of all kinds-----	29, 000
Amount of sinking fund on hand-----	3, 496
Amount of taxes collected-----	150, 000
Rate of taxes levied, 10.34 mills.	

## NEWSPAPERS PUBLISHED IN THE COUNTY.

*Daily*.—Pond Creek: Vidette.

*Weekly*.—Pond Creek: Vidette, News, Republican. Jefferson: Review. Medford: Patriot, Star. Wakita: Herald. Manchester: Journal. Renfrow: Tribune. Lamont: Dispatch, Valley News. Deer Creek: Times.

## GREER COUNTY.

[H. L. Crittenden.]

Greer County was organized as a county of Texas in 1886. On March 16, 1896, by a decision of the Supreme Court of the United States, it was detached from Texas and became a county of Oklahoma.

The reports of township assessors for the year of 1904 give the population of the county at 32,793 and the assessed valuation of taxable property at \$5,781,989. The land for the most part consists of broad level valleys gently sloping to the southeast, and high plateau. Spurs of the Wichita Mountains fringe the eastern border and a range of gypsum and rock-ribbed hills run through the center. The county is well watered, being in the forks of the two main branches of the headwaters of the Red River of the South and traversed by numerous smaller streams fed by many never-failing springs. The land varies in character from the black heavy loam to the red and light sandy soils, but each has shown about an equal degree of fertility under equally good farm management.

Not one-fourth of the land of Greer County is under cultivation, and as the county has an area of 1,511,575 acres, the greater part of which is tillable and very productive, the extent of the agricultural resources of Greer County can hardly be estimated.

The past three years has witnessed the development of Greer County from a cowman's country to an agricultural empire. While there are many cattle still in the county, every farmer has his little "bunch;" the big herds are all gone and the "nester" is now supreme and is not afraid of the cowman's cattle eating up his little crop.

The principal field products of Greer County are cotton, corn, and wheat. Cotton is the main crop; the soil and climate seem adapted to it and it grades well. In 1903 Greer County produced 50,000 bales of cotton, which brought the farmer a net average of \$50 per bale, making a total of \$2,500,000 for the crop, all of which went directly into the hands of the producer. The average yield for that year was three-fourths of a bale to the acre. The average yield of wheat for 1903 was 22 bushels to the acre.

The annual rainfall for the fiscal year ending June 30, 1904, was 22 inches, according to the report of the Government weather reporter at Mangum.

It is only within the past three years that any attention has been paid to fruit raising, but there are now many fine young orchards. Peaches, plums, and grapes do especially well here.

There is but little timber in the county and none at all that would be available for lumber.

In both the southern and northern parts of the county are croppings of large ledges of limestone from which building stone, in any dimensions desired, is obtainable. The hills near Mangum have belts of stone just the proper thickness for building purposes, the quality being a sort of cross between limestone and sandstone, making a very pretty and substantial wall. Plenty of good building sand can be had near Mangum for the hauling. Vast deposits of an excellent grade of red granite are piled up in the form of mountains along the eastern border, and at the town of Granite extensive preparations are being made, by eastern companies, to quarry, polish, and ship the stone. In the hills and in



the brakes along the river are millions of tons of pure white gypsum, croppings and surface indications of lead, zinc, copper, and coal, all as yet in the natural state and wholly undeveloped. Experts say vast deposits of oil and gas underlie several sections of the county, and some prospecting has been done with the result of developing near Granite a vein of lubricating oil of excellent quality but of limited quantity.

The incorporated towns of the county are: Mangum, county seat and location of United States land office, terminus of the Chickasha-Mangum branch Rock Island Railroad, bonds sold for a new \$20,000 high school building, also bonds sold for a \$30,000 waterworks plant; Altus, 25 miles southeast of Mangum, on Quanah line of Frisco railroad; Eldorado, about 400 inhabitants, also on the Frisco; Granite, on the Rock Island, population 630; Erick, in north part of the county, on the Choctaw road, about 400 people.

There are about 50 other small towns and post-offices in the county, nearly all of which are connected by a very complete system of telephone lines, owned by different persons or individuals, but all connected with the local exchange and long-distance lines at the Mangum central office. One farmers' mutual telephone line, owned and operated by farmers, is in operation, and another is being built.

The people in the process of developing the county from a grazing to an agricultural country have within the past three years been paying much attention to country roads, opening section lines, building bridges, working roads, etc., and are now much interested in the subject of good roads.

Greer County has 36 cotton gins, 2 flouring mills, 2 grain elevators, electric-light plant, ice factory, and a cotton-seed oil mill in course of construction.

The county has 140 organized school districts, 12,000 children of school age, and employs over 200 teachers. The children are all white; no colored children in the county.

The people generally are honest, industrious, law-abiding, kind-hearted, and hospitable, and are making the "Independent Kingdom of Greer" like unto a Garden of Eden.

There are 1,134 quarter sections of school land leased for cash rentals, which produce a large educational fund.

#### NEWSPAPERS PUBLISHED IN THE COUNTY.

*Weekly*.—Mangum: Sun-Monitor, Star. Leger: News, Times. Granite: Enterprise, Erick: Enterprise, Eldorado: Courier, Hollis: Herald, Texola: Herald, Bloomington: Times, Blair: Oriental Progress, Olustee: Outlook.

The county jail is valued at \$10,000, and the county grounds and court-house at \$20,000; safes and other furnishings at \$2,000. The bridges now in use are valued at \$40,000.

#### FINANCIAL STATEMENT OF COUNTY.

Total amount expended for county purposes.....	\$61,332.00
Amount of county warrants outstanding.....	2,355.00
Total aggregate indebtedness of county (bonds \$20,000, judgments \$17,000, and warrants \$2,355).....	39,355.00
Total amount of taxable property.....	5,202,211.00
Amount of bonded indebtedness.....	20,000.00
Outstanding indebtedness of all kinds (bonds \$20,000, judgments \$17,000, warrants \$2,355).....	39,355.00
Amount of sinking fund on hand and other county funds on hand.....	22,534.00
Amount of taxes collected, Territorial, county, and municipal....	142,998.99
Rate of tax levied, 7.8 mills.	

#### KAY COUNTY.

[E. P. Blake.]

Kay County lies in the northeastern portion of the Territory, having the Kansas line for its northern boundary. It has a total area of 472,000 acres. It contains some of the most fertile land in the Territory, and is in a high state of cultivation. Its population is 23,000. Newkirk is the county seat. Other cities are Ponca and Blackwell, all of which are thriving cities of the first class. Other towns are Chilocco, Kildare, Wheatland, Uncas, Kaw City, Peckham, Tonkawa, Sumpter, Braman, Willston, and White Eagle.

Kay County has 140 miles of railway, there being the main line or Galveston branch of the Santa Fe running through the county from north to south, with

a branch running northwest from Ponca City to points in Kansas, and also the St. Louis and San Francisco passing diagonally southwest through the county.

In the vicinity of Newkirk are extensive deposits of fine building stone. Quarrying them and culling for use is quite an industry in that locality. Gypsum is found in considerable quantities in the northeastern portion of the county, and a cement factory is located at Peckham.

Natural gas has been discovered at Blackwell, and other wells are being bored in anticipation of finding it in larger quantities by going farther down toward the Mississippi limestone level.

A flow of salt water of considerable volume was struck in one prospect hole which only requires cheap fuel for evaporation to make it a profitable proposition.

Deposits of shale are found in various places, particularly near Blackwell, that makes it an inviting point at which to locate a pressed-brick plant.

There are 5 flouring mills and several elevators along the different lines of railway, which afford convenient market for the large wheat crop usually raised in Kay County.

Two telephone companies furnish communication to and between all parts of the county.

The rural telephone service is highly appreciated and well patronized.

The rural free delivery is in operation from Blackwell, Newkirk, and Ponca City, with several routes from each place.

Kay County is well watered by many streams, the principal ones being the Salt Fork and Chickaskia rivers, Bitter Creek, Duck Creek, Bois d'Arc Creek, Deer Creek, Turkey Creek, and Thompson Creek.

Timber borders all running streams, there being the following varieties: Cottonwood, walnut, oak, willow, elm, and pecan. The farmers are planting a great many catalpa, black locust, walnut, and cottonwood trees about their farms for shade.

Dairying is carried on to a limited extent, but not as much as results justify, as the county is an ideal place for dairying.

The assessed valuation of Kay County is \$4,508,544. There are 7,575 persons of school age, 89 school districts, and 325 quarter sections of school land. The court-house building is valued at \$10,000, the jail and cells at \$5,000, the furnishings of county buildings at \$1,000, and the ground on which they are located at \$1,000. The steel and wooden bridges in the county are valued at \$50,000.

#### FINANCIAL STATEMENT OF COUNTY.

Total amount expended for county purposes	\$59,261.58
Total aggregate indebtedness of county	35,000.00
Total amount of taxable property	4,508,544.00
Amount of bonded indebtedness	35,000.00
Amount of sinking fund on hand	9,846.60
Amount of taxes collected	167,970.52

Rate of tax levied, 15 mills.

#### NEWSPAPERS PUBLISHED IN THE COUNTY.

*Daily*.—Ponca: Courier. Blackwell: News. Newkirk: Socialist.

*Weekly*.—Newkirk: Republican-News-Journal, Herald-Democrat. Ponca: Courier, Democrat, Times. Tonkawa: News, Enterprise. Blackwell: Times-Record, Sun. Nardin: Star. Braman: Star, Leader. Kaw City: Star. Kildare: Record.

*Monthly*.—Ponca: I. O. O. F. Journal. Newkirk: Academy Review.

#### KINGFISHER COUNTY.

[Emory D. Brownlee.]

Population, 20,000. Area, 568,000 square acres. Topography, generally level prairie with numerous creeks and the Cimarron River.

Agricultural opportunities are best for corn, broom corn, cotton, and wheat, and 86 per cent of cultivated land is planted to these crops.

The soil for the most part is black loam, with portions of red clay.

The annual rainfall for the past ten years has been 33 inches. Average temperature for ten years, 39°.

Fruits mostly raised are grapes, plums, peaches, apples, and pears.

There are no ranches in this county. The farmers generally have a few head of cattle and other kinds of stock. The number of cattle in the county is 40,000 head. Present conditions are best adapted to agriculture. The county is well watered with numerous creeks. The Cimarron River runs across the entire county.

The county has some timber suitable for posts and firewood. Timber of small value for lumber.

There are large deposits of sandstone suitable for building purposes.

The largest town is Kingfisher, which is the county seat. The other towns and their populations are: Hennessey, 1,500; Okarche, 550; Cashion, 500, and Dover, 300.

The school population of the county is 7,000, and the number of schools in the county is 140.

There are 200 quarter sections of school land in the county. There are 6 mills and 18 elevators in the county, 3 cotton gins, 1 ice factory.

There are 2 railroads in the county. There are 2 telephone systems reaching every town in the county.

Rural free delivery routes have been established from the following offices: Kingfisher, Hennessey, Cashion, Dover, Okarche.

The condition of the county roads is very good and the county has 20 steel bridges. The value placed on the bridges of the county, including wooden, is \$60,000.

Kingfisher County has one of the finest court-house buildings in the Territory, which is valued at \$40,000 and is located on grounds worth \$8,000. The safes, furniture, and other furnishings are valued at \$8,000. The jail and steel cells are valued at \$7,000.

The assessed valuation of the county as equalized by the Territorial board of equalization is \$3,195,507.

#### FINANCIAL STATEMENT OF COUNTY.

Total amount expended for county purposes.....	\$52,301.40
Amount of county warrants outstanding.....	13,912.62
Total indebtedness of county.....	68,912.62
Total amount of taxable property.....	3,205,046.00
Amount of floating indebtedness.....	17,912.62
Amount of bonded indebtedness.....	51,000.00
Outstanding indebtedness of all kinds.....	68,912.62
Amount of sinking fund on hand.....	611.78
Amount of taxes collected.....	107,014.84
Rate of tax levied, 19 mills.	

#### NEWSPAPERS PUBLISHED IN THE COUNTY.

*Daily*.—Kingfisher: Star. Hennessey: Eagle.

*Weekly*.—Kingfisher: Free Press, Times, Reformer. Hennessey: Clipper, Press-Democrat, Eagle. Kiel: Press. Dover: News. Cashion: Advance.

*Monthly*.—Kingfisher: Oklahoma Sunday School Worker, The Kingfisher.

#### KIOWA COUNTY.

[W. A. Madaris.]

The area is 737,080 acres; population, 23,000. The general topography of the county is slightly rolling, with long stretches of comparatively level prairie gently sloping to the ravines and creeks, which are deep, narrow, and swift. The county is watered by Big and Little Elk rivers, extending through the center of the county from north to south, forming a junction 2 miles southwest of Hobart. The Rainy Mountain Creek heads in the north center of the county, running easterly, emptying into the Washita near the northeast corner of the county. Otter Creek heads near the Rainy Mountain and runs in a southerly direction, emptying into the Red River near the southwest corner of the county. We have running through the north center of the county what is known as the Wichita range of mountains, which, compared with the Ozark or Rocky Mountains, are only "foothills." Our most fertile valleys lie at the base of these hills, but they occupy but a small portion of our Territory.

The soil of our county is generally of the dark red loam, which for its bounti-



ful crops is unsurpassed by any soil, although we have in the vicinity of Hobart along the Otter and north of the Rainy Mountain Creek what is known as "tight" land, being of a very dark and solid soil that needs deep plowing.

This is the only county in the Territory that has the "east wind," it being a fact that our prevailing winds are from the east, northeast, and southeast, although most of our winds in the "good old summer time" come from the southwest. This condition is largely the cause of our abundant rainfall, which averaged for three years last past 28 inches.

We can only speak of our fruit from our prospects, for the county has been settled less than three years, and nowhere could nature do more for our young orchards than she has done here.

This is a paradise for the stockman and butter maker, the grasses being such that they not only produce fat, but our "winter-wheat" pasture furnishes a butter that rivals anything made in the Western Reserve.

We have but little timber, but have an abundant supply of the finest magnesian limestone across the north center of the county, while the mountain district furnishes granite in unlimited quantities.

The cities of the county are: Hobart, the county seat; Lone Wolf, 300 population; Gotebo, 600; Mountain View, 700; Roosevelt, 300; Mountain Park, 400, and Snyder, 1,000.

Hobart has a school population of over 800, with one fine \$15,000 building and 2 four-room buildings. The other cities of the county are well supplied with up-to-date school buildings, and the schools are in the hands of teachers equal to the best of the older States.

The county has an assessed value of \$3,500,000, and an actual value of more than three times that. As showing the profits yielded our farmers last year, the corn crop ranged from 18 to 25 bushels on the upland, and from 25 to 40 bushels on the bottoms. Wheat averaged from 20 to 35 bushels. Owing to the early spring drought, the land sown to wheat last fall was replanted with cotton, and while there were delivered over 12,000 bales of cotton at Hobart last fall there will be over 50,000 bales this year.

There are 3 rural mail routes from Hobart, 4 from Gotebo, 4 from Lone Wolf, 3 from Roosevelt, 2 from Mountain Park, 2 from Mountain View, and 2 from Komalty.

Telephone wires connect us with the outside world by long and local lines.

The people are too busy to give much attention to the matter of "good roads," but with our facilities for making rock roads the building of them is only a matter of a few years.

Oil has been discovered all along the base of the Wichita Mountains from Granite to Fort Cobb, but as yet not in paying quantities.

We have near Hobart the finest clay for the making of brick.

The Frisco and Rock Island railroads traverse the county from north to south and from east to west.

There are 5,844 persons of school age, 106 school districts, and 720 quarter sections of school land in the county.

The temporary court-house building is valued at \$1,000, safes and other furnishings at \$3,500, and the jail and steel cells at \$2,650. The square or block of ground on which the public buildings are located is valued at \$10,000.

#### FINANCIAL STATEMENT OF COUNTY.

Total amount expended for county purposes.....	\$33, 418. 48
Amount of county warrants outstanding.....	8, 361. 92
Total aggregate indebtedness (money in treasury to pay about \$1,200) .....	8, 361. 92
Total amount of taxable property.....	2, 451, 979. 81
Outstanding indebtedness of all kinds (warrants).....	8, 361. 92
Amount of taxes collected, including county, city, township, school district, and Territorial.....	93, 102. 90
Rate of tax levy, 18 mills.	

#### NEWSPAPERS PUBLISHED IN THE COUNTY.

*Daily*.—Hobart: News-Republican, Pointer.

*Weekly*.—Hobart: News-Republican, Pointer, Chief. Harrison: Gazette, Herald. Mountain View: Republican, Progress. Snyder: Signal-Star, Otter

Valley News. Mountain Park: Lance. Lone Wolf: Echo. Roosevelt: Record. Manitou: Fieldglass.

## LINCOLN COUNTY.

[Harry Gilstrap.]

Population of county, as shown by assessors' returns for this year, 31,196. This is probably less than actual population. Area is 619,000 acres. Surface of county rolling, rough in some places. Principal streams, Deep Fork, Dry Fork, Quapaw.

Agricultural opportunities include the growing of nearly every kind of crop with profit. Resources not fully developed. Room for more good farmers.

Soil is mostly of sandy loam, red and black, and very fertile. Some parts quite sandy, but good for cotton.

County is well watered. Numerous small streams and springs.

Annual rainfall about 34 to 36 inches.

Fruit does well. Apples, peaches, pears, plums, apricots, cherries, and berries of all kinds do well. Considerable fruit is shipped from Chandler. Cantaloupe growing an important industry.

Stock raising on small scale successfully carried on. Native grasses of fair quality. County better adapted to general farming than to extensive stock raising. Large numbers of cattle fed during winter season on products of cotton-oil mills.

There is considerable timber, mostly oak. A good deal of this is of value for lumber, and several sawmills are in operation in the county.

Abundance of stone suitable for building, mostly sandstone, in all colors.

The largest town is Chandler, the county seat. Other towns are Stroud, Wellston, Sparks, Agra, Tryon, Carney, Fallis, Meeker, Payson, Kendrick, Avery, Davenport, Merrick, and Warwick. Good school buildings in all towns and country districts.

There are about 40 cotton gins in the county, 2 cotton-oil mills at Chandler and Stroud, pressed-brick and ice factory at Chandler, flour mills at Chandler and Stroud, and numerous sawmills.

There are about 36 post-offices in the county—one second-class, two third-class, and the rest fourth-class.

Missouri and Kansas telephone system has stations at Wellston, Chandler, Davenport, and Stroud. The Pioneer Company and connections reach Wellston, Chandler, Stroud, Sac and Fox Agency, Arlington, Prague, Meeker, Sparks, Payson, Rossville, Fallis, Carney, Tryon, Agra, Parkland, Kendrick, and Avery.

Rural free-delivery routes as follows: Chandler, 6; Carney, 1; Tryon, 2; Avery, 3; Stroud, 1; Prague, 1; Meeker, 1; Payson, 2; Sparks, 1. Besides this there are several routes which start from offices in adjoining counties and serve patrons in this county. Numerous other routes have been petitioned for.

Condition of wagon roads in county is not good, but is being improved. From \$25,000 to \$50,000 a year is being expended in this county on roads and bridges. The interest in this work is good and apparently is increasing.

There is great interest in oil and gas, and probably more than 100,000 acres have been leased for oil and gas purposes. A well is being drilled at Chandler and has reached a depth of about 1,000 feet, with every indication of duplicating the success at Red Fork, Ind. T., the log of the drilling being identical with that at Red Fork, it is said. Numerous companies have been chartered to drill for oil, and arrangements are being made at Stroud, Arlington, and Wellston to begin work.

Cotton, corn, fruit, and stock are most conspicuous products.

Frisco has two lines; Fort Smith and Western, Santa Fe, and Katy each have one line of road across county. About 19 shipping points in all in the county.

There are 11,511 persons of school age, 135 school districts, and 212 quarter sections of school land in the county.

The court-house is valued at \$2,000, and the safes and furnishings at \$1,500. The jail is valued at \$1,500, and the ground on which all are located at \$25,000.

The bridges of the county are valued at \$40,000. The assessed valuation of property as equalized by Territorial board is \$4,015,372.



## FINANCIAL STATEMENT OF COUNTY.

Total amount expended for county purposes-----	\$87,023.93
Amount of county warrants outstanding-----	9,754.57
Total aggregate indebtedness of county-----	78,387.22
Total amount of taxable property-----	4,037,600.00
Amount of floating indebtedness-----	11,387.22
Amount of bonded indebtedness-----	67,000.00
Outstanding indebtedness of all kinds-----	78,387.22
Amount of sinking fund on hand-----	6,359.82
Amount of taxes collected-----	196,148.67
Rate of tax levied, 17.25 mills.	

## NEWSPAPERS PUBLISHED IN THE COUNTY.

*Daily*.—Chandler: Publicist.

*Weekly*.—Chandler: News, Publicist, Tribune. Stroud: Messenger, Star. Wellston: News. Prague: News, Patriot. Carney: Enterprise. Agra: News, Meeker: Herald. Kendrick: Herald. Fallis: Star, Blade. Sparks: Visitor. Davenport: Leader. Warwick: Warwickian. Tryon: News.

## LOGAN COUNTY.

[John Golobie.]

Population, 43,636. Area is 472,000 square acres. General topography, rolling in the eastern portion and level in the northern and western. Cimarron and Cottonwood rivers.

Agricultural opportunities, the very best. All kinds of crops are raised and diversification is the rule. About one-half of the available land is in cultivation.

*Soil*.—Principally a sandy loam of a reddish cast, with a clay subsoil. Very fertile. Adapted to all classes of grain and fruit. Annual rainfall, 34 inches.

*Fruits*.—The most successful is the Elberta peach, this county having now nearly a million trees, about 50,000 of which are in bearing. The Elberta peach reaches the highest state of perfection in Logan County to be found anywhere, and from present indications will soon lead every other product, although the county is equally well adapted to all other classes of fruits.

Next in importance comes the apple and then the cherry, followed by the pear. Small fruits are grown extensively and successfully.

*Stock raising*.—This is a good stock county and the native grass is of good quality, although it is fast being superseded by alfalfa and bermuda, the latter being the best grazing grass for this climate to be found.

The county is exceptionally well watered, the principal streams being the Cimarron, Cottonwood, and Skeleton. The springs are numerous, especially along the creeks and rivers, and scarcely 160 acres can be found without good living water. There is plenty of timber for domestic uses, including posts and firewood. The kinds are cottonwood, black-jack, post oak, and pecan, with sufficient of each for home consumption but not of any value for lumber.

*Stone deposits*.—A splendid grade of building stone of a sandy formation is found all over the county, and large quantities of excellent building sand. We have no limestone.

*Largest towns*.—Guthrie is the county seat and also capital of the Territory. It has good school buildings and good schools. Logan County has at this point the only county high school in Oklahoma Territory, the building costing \$35,000, with an able corps of teachers, consisting of 13. Other principal towns are Mulhall, Marshall, Crescent, Orlando, Coyle, Meridian, Campbell, Navina, and Seward. These range in population from 50 to 800, and are well supplied with school buildings and ordinary mercantile establishments.

*Manufacturing*.—The principal manufacturing establishments of the county are flour mills, of which there are 5; cotton gins, 14; ice plants, 2; oil mill, 1, and a number of smaller plants.

Telephone systems, 2—the Missouri and Kansas Telephone Company and the Pioneer Telephone Company. These reach all of the larger as well as the smaller towns in the two Territories, with long-distance connections with St. Louis, Kansas City, Chicago, and other points.



The rural free-delivery routes are: Guthrie, 8; Marshall, 4; Mulhall, 5; Orlando, 4; Perth, 1; Crescent, 3; Goodnight, 1; Coyle, 2; Waterloo, 1; Seward, 1.

*Country roads.*—We have a fair amount of graded roads, and this year built 60 bridges. The public has taken a great interest in the good-roads movement, and the headquarters for the Territory is at Guthrie.

*Undeveloped resources.*—It is thought that large quantities of gas and oil are underneath Logan County, but up to this time no prospecting has been done. The most important feature of this county is its excellent soil as regards fruit growing.

*Railroad facilities.*—Logan County has good railroad facilities, there being the Santa Fe, Rock Island, Frisco, Katy, Fort Smith and Western, Denver, Enid and Gulf, and the St. Louis and Elreno.

The taxable valuation for 1904 is \$5,033,760. Among the assets of the county may be mentioned a stone court-house, its furnishings, and the grounds on which it is located, all valued at \$20,000; also a jail, costing \$2,000. The value of iron and wooden bridges in the county is estimated by the county commissioners to be \$150,000.

## FINANCIAL STATEMENT OF COUNTY.

Total amount expenses for county purposes-----	\$70,063.99
Amount of county warrants outstanding-----	2,346.17
Total aggregate indebtedness of county-----	166,346.17
Total amount of taxable property-----	5,033,760.00
Amount of bonded indebtedness-----	163,000.00
Outstanding indebtedness of all kinds-----	165,346.17
Amount of sinking fund on hand-----	847.11
Amount of taxes collected-----	166,494.53
Rate of tax levied, 15 mills.	

There are in the county 8,557 persons of school age, 97 school districts, and 165 quarter sections of school land under lease.

## NEWSPAPERS PUBLISHED IN THE COUNTY.

*Daily.*—Guthrie: Oklahoma State Capital, Leader.

*Weekly.*—Guthrie: State Capital, Oklahoma Leader, Oklahoma Farmer, Register, Guide, Southwest World, Searchlight. Mulhall: Enterprise, Oklahoma Christian, State Journal. Orlando: Herald. Langston: Review. Coyle: Clipper. Marshall: Tribune. Crescent: News.

*Monthly.*—Guthrie: Oklahoma Churchman, Oklahoma Medical Journal, Practical Pointers.

## NOBLE COUNTY.

[Ernest Jones.]

Noble County has an area of 499,000 acres, inclusive of 192 quarter sections of school land, not taxed, and six and a fraction townships of the Otee and Ponca Reservation added to the county in the last year. The population of the county is 13,212.

The county is devoted exclusively to agricultural purposes, except those townships of the Indian reservation recently added, which yet contain some pastures which are used for domestic and southern cattle. Of the total area there are 235,500 acres under cultivation. The southern part is somewhat broken, the tillable land being on the creek bottoms and in patches on the slopes. The streams of Long Branch, Salt Fork, Warren Creek, Red Rock, Black Bear, and Cow Creek, fed by myriads of springs, flow through the county east to west and furnish an abundant supply of good water. The Arkansas River bounds the county on the east. From Black Bear Creek the country slopes gradually to the north, smooth prairie forming part of the great northern wheat district. The soil is of the red sandy variety on the uplands, with black loam on the bottoms, but all of good quality, very productive, and devoid of alkali and gumbo.

Corn and cotton in the south and oats and wheat in the north, chiefly the latter, are the principal products. The culture of alfalfa is growing in favor each year on the lowlands. The fruit industry is gaining prominence, particu-

larly with upland farmers. Peaches are preferred, while grapes and plums are never failing. Cherries, apples, and berries are exceptionally successful. The hay crop is furnished chiefly by native grasses, yet alfalfa promises to be a competitor.

The timber of commercial value is principally oak, cottonwood, and elm, though the shipment of walnut logs the past year has been quite an item in the way of exports. Timber is being well preserved and protected, since the great portion of cutting and sawing ceased when sufficient land was cleared for cultivation.

Red and white sandstone of the finest quality for building purposes exists in inexhaustible quantities, and is used in the towns in preference to brick by reason of the greater cost of the latter.

Perry is the county seat and metropolis. Two railroads pass through here, the Frisco running east and west and the Santa Fe running north and south, each the entire length of the county. This city has its own electric light, water, and ice plants; has 11 churches, 4 school buildings, and 1,120 school children; the third largest flouring mill in the Territory, 2 cotton gins, and 4 grain elevators. The Pioneer and Bell telephone systems render communication with the outside world easy of access.

The other towns of the county are Morrison, Billings, Ceres, Sumner, Lucien, and Covington.

The county enjoys seven rural routes out of Perry, covering a district with a radius of 12 miles and serving 3,000 people. While the roads and bridges are in good condition, the rural-route accession has awakened a decided interest in the good-roads movement, with excellent results.

The completion of the Frisco Railroad and the annexation of the Otoe Reservation lands have so increased the valuation of property assessable that the rate of taxation was 19½ mills this year, as against 29½ mills in 1902 and 34 mills in 1901.

The oil and gas proposition has aroused much enthusiasm, and the citizens of Perry are now projecting a test well to determine the existence of these commodities, as well as coal, which are supposed to underlie this district.

There are 3,567 persons of school age and 60 school districts in the county. The fine court-house is valued at \$16,000 and its safes and other furnishings at \$6,000. The jail is valued at \$9,000, and the block of land on which the county buildings are located is valued at \$75,000. The bridges in the county are valued at \$60,000.

#### FINANCIAL STATEMENT OF COUNTY.

Total amount expended for county purposes	\$34,046.43
Amount of county warrants outstanding	2,848.27
Total aggregate indebtedness of county (bonds, \$70,500; judgments, \$3,572.87; accounts, \$10,967.62)	85,040.49
Total amount of taxable property	2,667,374.00
Amount of floating indebtedness	8,119.35
Amount of bonded indebtedness	70,500.00
Outstanding indebtedness of all kinds	85,040.49
Amount of sinking fund on hand	4,531.75
Amount of taxes collected	121,838.51

Rate of tax levied, 19.5 mills.

#### NEWSPAPERS PUBLISHED IN THE COUNTY.

*Daily*.—Perry: Enterprise-Times, Republican.

*Weekly*.—Perry: Republican, Enterprise-Times, Sentinel, News, Neugigkeiten (German). Billings: News.

*Monthly*.—Perry: Temperance Beacon, Pythian Times.

*Quarterly*.—Perry: Oklahoma.

#### OKLAHOMA COUNTY.

[R. Kleiner.]

Oklahoma County is situated in the southern part of the Territory, and has an area of 463,000 acres. The county contains a population of about 61,000 people, with an assessed personal and realty valuation of \$9,124,530. Its rail-

road mileage covers 142.97 miles. The Santa Fe system extends north and south through the county, the Rock Island system east and west, the Frisco system northeast and southwest, the Katy system from Oklahoma City northeast with a branch southwest to Coalgate, Ind. T., and the St. Louis, El Reno and Southwestern crosses the northwest part of the county.

The school population of the county, all told, is 12,852 students, with an average daily attendance of 5,389. The number of schoolhouses is 122, valued at \$313,671, with an additional valuation for fixtures of \$38,890. The number of teachers employed is 202. Denominational and private schools are not included in the foregoing.

There are 17 post-offices and 19 rural free-delivery routes in the county. Two telephone companies operate in the county, viz, the Missouri and Kansas and the Pioneer, with 256 miles of wire through the rural districts and 2,760 subscribers. Each railway system is paralleled by numerous wires controlled by the Western Union and Postal Telegraph companies.

The North Canadian River courses through the south portion of the county, furnishing water power as well as irrigation. Other streams of the county are Deep Fork, Bluff, Chisholm, Deer, and Cow creeks. The Big or South Canadian River forms part of the boundary line on the south.

Oklahoma City, the county seat, is located near the center of the county. Edmond, in the north part of the county, is the next largest place. Other towns are Arcadia, Britton, Choctaw, Council, Dixon, Harrah, Jones City, Luther, Spencer, Wheatland, and Witcher.

The western half of the county is undulating prairie, with the exception of the old Government reserve of nine sections known as the "Grove," and comprising a heavy body of timber. Outside of Council Grove this portion of the county is almost exclusively devoted to the production of small grains, such as wheat, oats, barley, Kaffir corn, and milo maize. The eastern part is more broken and hilly, portions of which are covered with brush and black-jack timber. Its valleys, however, are very fertile, producing in abundance wheat, oats, corn, and potatoes, while the hillsides produce in like proportion cotton, melons, and all kinds of fruits. Cotton gins are located in all the towns, and seven flour mills consume nearly all the grain raised.

Cottonwood and elm constitute about all the timber along the streams in the western portion of the county, while in the eastern part is found oak, walnut, pecan, and hickory in abundance.

Very particular attention is given to the raising of improved stock, horses, mules, cattle, hogs, and poultry. Besides the pleasure connected with this important industry, a large and profitable revenue is derived therefrom. In the late autumn and during the winter the stock are permitted to graze upon the green wheat and have access to the straw stacks. Alfalfa will grow in almost every part of the county, and is a wealth producer in pasture and green food for hogs, and for hay it has no equal in feeding value.

The greatest variety of soils abound, from the very blackest loam, grayish cast, chocolate color, to a light and reddish, sandy, open, and porous land, thus presenting opportunities for rotation and diversity of farm crops to suit the most exacting farmer. The average rainfall, annually, for the county is 31 inches.

The water courses are fairly well provided with bridges, and highways are in good, serviceable condition a greater portion of the year. A general interest has been manifested for better roads, and greater improvements are noticeable in that direction. The county is supposed to be situated in the coal, gas, and oil belt, and developing companies are now at work to verify this supposition.

Horticulture is a growing industry of great importance. Large commercial orchards, consisting of apples, peaches, and pears, have been planted and are coming into bearing, with good results. Many vineyards have been planted, too, and their heavy fruitage demonstrates the faith the people had in this county as a fruit-producing section, and that, too, of the finest quality and flavor.

Edmond is a city of the first class. The Central State Normal School is located at this thriving city. This institute is under the management of Prof. Frederick H. Umholtz, president, and has an enrollment of 761 pupils, with 24 teachers employed. Cost of building up to the present time has been \$85,000. The six churches have large attendances, and the city enjoys the reputation of exceptional moral government.



The value placed on the county jail is \$5,000 and the public grounds owned by county is \$5,000. The safes and furniture belonging to the county are valued at \$2,000, and the bridges at \$50,000. The county poor farm is valued at \$10,000.

## FINANCIAL STATEMENT OF COUNTY.

Total amount expended for county purposes-----	\$94,556.91
Amount of county warrants outstanding-----	16,859.27
Total aggregate indebtedness of county-----	254,459.27
Total amount of taxable property-----	9,124,530.00
Amount of floating indebtedness (warrants outstanding)-----	16,859.27
Amount of bonded indebtedness-----	237,600.00
Outstanding indebtedness of all kinds (including warrants outstanding)-----	254,459.27
Amount of sinking fund on hand-----	3,118.50
Amount of taxes collected-----	309,452.92

Rate of tax levied, 14.5 mills.

## NEWSPAPERS PUBLISHED IN THE COUNTY.

*Daily*.—Oklahoma City: Times-Journal, Oklahoman, Legal News.

*Weekly*.—Oklahoma City: Times-Journal, Oklahoman, Post, Labor Signal, Western World, Volksblatt, Home Companion, Parish Register. Edmond: Enterprise Sun. Luther: Register. Jones: Canadian Valley News. Wheatland: Monitor.

*Monthly*.—Oklahoma City: Oklahoma School Herald, Journal of Commerce, Southwestern School Journal, Medical News-Journal, Presbyterian Review.

*Semimonthly*.—Oklahoma City: Oklahoma Farm Journal.

## PAWNEE COUNTY.

[D. Frank Johnson.]

Pawnee County, taking its name from the Pawnee tribe of Indians, to whom it formerly belonged, is situated in the northeastern part of Oklahoma Territory, and is preeminently a general-purpose country, and presents an inviting field for the farmer and stock raiser.

Its valleys and lowlands are as rich and productive as are to be found anywhere, while the uplands are of superior quality, and such as are not suitable for agricultural purposes produce a rare quality of the richest and most nutritious of grasses. Generally speaking, it is a prairie country, but there is a sufficient amount of timber skirting the numerous streams to fully supply all domestic requirements, while the finest quality of building stone is found in an abundance in many parts of the county, viz, at Ralston, Pawnee, Blackburn, Cleveland, Jennings, and Meramec, where quarries have been opened and operated sufficiently to supply local demand, and will, no doubt, in the future, with increased transportation facilities, find its way into other localities and become a source of no small amount of revenue.

Pawnee County has a population of 13,500 people, who are prosperous and happy. Eighty well-built schoolhouses provide ample facilities for the education of the youth, while the Christian people have erected more than 30 buildings which are dedicated to the worship of God. Seventy thousand acres of well-improved land, with an abundant rainfall, yields forth annually (and to this time there has been no exception) magnificent harvests, one-half of which is corn, 15,000 acres of wheat, 10,000 acres of cotton, while the remainder is divided between kafir corn, oats, cane, alfalfa, potatoes, and such like.

Every farmer devotes some time to horticulture, and is rewarded therefor by harvesting a choice quality of luscious fruit and berries. Ten thousand horses and mules assist the farmer in the production of these crops, while more than 20,000 head of cattle grow and fatten on the succulent grasses that cover the hillsides, and 13,500 hogs are by growth and increase adding daily to the wealth of their owners, and all this time the busy housewife looks on with contentment as her large flocks of poultry (free from disease) are rapidly getting ready to tickle the palate at the table at home and pay the grocery bill in town.

The people in this county pay taxes on personal property of the value of \$721,486 and real estate of the value of \$1,055,905, making a total assessed valuation of \$1,777,391.

Pawnee County is bounded on the north and east by the Arkansas River, while the Cimarron River skirts practically all the southern boundary, and numerous creeks wend their way mostly in an easterly direction across the county, the most important of which, commencing in the northern part of the county, are Coal Creek, Spring Creek, Black Bear Creek, Camp Creek, Hell-roaring Creek, Ranch Creek, Cedar Creek, House Creek, and Little Bear Creek.

That practically all of this county is underlaid with gas and oil is the general opinion of experts, which opinion is borne out, in part at least, by a splendid oil gusher at the town of Cleveland, in the eastern part of the county, which is now flowing at the rate of more than 100 barrels per day. Numerous other prospectors are at work in different parts of the county, the result of which is confidently expected to add largely to the commercial importance of this part of the Territory. It is also known that coal of good quality exists at Ralston, in the northeastern part of the county, and while it has not been fully demonstrated, it is confidently believed that when fully investigated it will be found in sufficient quantities to be of considerable commercial importance.

Three railroads—namely, the Santa Fe, the Frisco, and the Katy—furnish transportation facilities to the people of Pawnee County, and enable them to reach any desirable market in a reasonably short time.

Flouring mills with all the latest improvements are located at Pawnee and Blackburn. Elevators of sufficient capacity for handling all the surplus grain are to be found at practically all railroad points. Cotton gins of the latest and improved kinds are operated at Pawnee, Blackburn, Cleveland, Jennings, Terilton, Meramac, Sinnett, Keystone, and Skedee.

The Pawnee Indian school at Pawnee, the county seat of this county, is worthy of special mention, and is one of the best governed and regulated institutions of its kind to be found anywhere.

The Congregational College located at Jennings is now beginning its second year under the most favorable and promising conditions.

Pawnee County adds its share to the progress and prosperity of this magnificent Territory, and its citizens will each year bring full measure and continue to add to the greatness of Oklahoma.

The school population is 5,077. There are 200 quarter sections of school land in the county.

The value of county property is placed as follows:

Court-house .....	\$17, 000
Jail and cells.....	6, 000
Grounds .....	20, 000
Safes and other furniture.....	1, 000
Bridges .....	50, 000
132 acres of land (not poor farm) .....	1, 000
<b>Total .....</b>	<b>95, 000</b>

Assessed valuation of all property as equalized by the Territorial board is \$3,639,963.

#### FINANCIAL STATEMENT OF COUNTY.

Total amount expended for county purposes.....	\$46, 097. 84
Amount of county warrants outstanding .....	1, 943. 08
Total aggregate indebtedness of county.....	34, 267. 75
Total amount of taxable property.....	2, 773, 182. 00
Amount of floating indebtedness.....	2, 267. 75
Amount of bonded indebtedness.....	32, 000. 00
Outstanding indebtedness of all kinds.....	34, 267. 75
Amount of sinking fund on hand.....	1, 838. 45
Amount of tax collected.....	30, 458. 97

Rate of taxation levied, 20 mills.

#### NEWSPAPERS PUBLISHED IN THE COUNTY.

*Weekly.*—Pawnee: Times-Democrat, Courier-Dispatch. Cleveland: Triangle, Enterprise. Ralston: Free Press, Reflector. Jennings: News. Blackburn: Flashlight. Quay: Transcript.



## PAYNE COUNTY.

[Frank J. Wikoff.]

Payne County, which has an estimated population of 22,000 people, is located in the northern portion of Oklahoma, and extends from the Santa Fe Railway on the west to the line of the Creek Nation, Indian Territory, on the east, thus embracing the area in Oklahoma best adapted from the standpoint of soil and climate to grow successfully all the crops grown within the Territory. The general topography of the country is slightly rolling, but being traversed by small streams has extensive valley lands with rich level bottoms, and in the northeastern portion a great deal of perfectly smooth prairie land.

Its agricultural opportunities are almost unlimited, and lack only the intelligent farmer for their highest development. The soil is deep, and except in the western portion, where the reddish soil is found, for the most part, is black or dark brown upon the surface.

The average rainfall of Payne County, as shown by the records of the agricultural experiment station at Stillwater, for the past ten years has been 33 inches. Throughout the eastern portion of the county corn is the principal crop, and is as sure a crop in that portion as in any part of the great southwest, the creek bottom lands having grown successful corn crops for twelve years out of fourteen. Throughout the other portions of the county wheat, oats, and cotton are all grown equally as well. Broom corn, Kafir corn, castor beans, potatoes, sweet potatoes, peanuts, and melons are also successful crops, and extensively grown in some localities. The county is proving also one of the best fruit-growing districts in the Territory, the eastern portion being particularly adapted to apples, of which the Missouri Pippin, Ben Davis, Winesap, and Arkansas Black are the most successful varieties. Peaches are grown everywhere in abundance, the Elberta, Crawfords, and Old Mixon being among the best varieties. Apricots, plums, pears, and grapes, particularly the latter, are grown abundantly.

Present conditions in Payne County are about equally as well adapted to stock raising as to agriculture, and with the diversified character of the soil they will probably always remain so. In addition to the native grass pasture, Bermuda grass is proving wonderfully successful as a summer pasture, and alfalfa is grown successfully in many parts of the county.

The Cimarron River traverses the entire county from east to west, and the Stillwater nearly three-fourths of its length. Both streams have numerous tributaries, many of which have their sources in springs which are found here and there over the county. All the streams and the adjoining slopes are covered with timber, and on the higher lands in many places are found the post oak and black jack. Much of the timber is very fine, and many sawmills continually turn out large quantities of native lumber. The varieties found are the white oak, burr oak, post oak, the American white elm, red elm, black walnut, pecan, sycamore, ash, Kentucky coffee bean, and honey locust. In the middle and western portions of the county both the red and white sandstone is found, much of which is well suited for building material. The eastern portion is traversed by limestone, and the soil is the characteristic rich black color of the limestone countries.

The largest town in the county is Stillwater, which is the county seat, and the seat of the agricultural and mechanical college of the Territory, with which is connected the agricultural experiment station. These institutions are fostered and maintained by the Federal Government, and have annual appropriations from that source of \$40,000 per annum, while the annual endowment from the Territory amounts to about \$22,000. The college owns 320 acres of land adjoining the city of Stillwater, with nearly \$100,000 invested in buildings and something over that amount in equipment. The enrollment of students is nearing the 500 mark. The city has also 3 fine public school buildings, and maintains an exceptionally good high school. A good system of waterworks, and an electric-light plant in connection therewith, belong to the city, and afford excellent service to her people. There are 3 national banks, 3 cotton gins, 2 elevators, 1 fine flouring mill of 500 barrels daily capacity, an ice plant, 2 brick plants, and 1 creamery.

The other important towns of the county are Cushing, with a population of about 800, in the southeastern portion of the county; Ripley with about 300 and Perkins with 500 in the southern portion, and Glencoe with about 400 people in the northeastern portion. Each of them are nice little business towns, with the usual accompaniment of banks, cotton gins, elevators, etc. The county also has five or six small country post-offices. These are gradually being sup-



planted, however, by the rural free-delivery route service, of which latter Stillwater has 6 routes; Perkins, 4; Cushing, 3; Ripley, 3; Glencoe, 3.

The Pioneer Telephone Company reaches every town in the Territory, and has a city exchange system in Stillwater with 350 'phones in use. The towns of Ripley, Cushing, and Perkins have small private exchange systems. The Missouri, Kansas and Texas long-distance telephone system also reaches Stillwater.

Throughout the level portions of the county the country roads are very good, but in the other portions much work remains to be done to make good roads, and great interest is awakening in the good-roads movement now being agitated. The county is putting in a great many excellent iron bridges. Something like 40 such bridges have already been put in, and contracts are now being carried out for about 25 more.

Oil and gas have been found in paying quantities close to Payne County, and drilling is in progress at present at both Stillwater and Cushing. A large percentage of the lands of the county have been leased for this purpose, and many companies are preparing to put down wells in the eastern portion of the county at once. Coal has been found in small quantities in many places in the eastern portion of the county, but no development in a profitable way has yet been made. Copper, zinc, and lead have also been found in the northwestern part of the county, and some mining has been done and considerable rich ore found. It is doubtful, however, if the quantity is sufficient to make it a paying proposition.

The Santa Fe Railway has two lines running clear through the county, and the Missouri, Kansas and Texas Railway crosses the southeastern portion with its new line from Coffeyville, Kans., to Guthrie and Oklahoma City.

The one remarkable fact concerning Payne County is that its location is such that it raises equally well every product raised successfully within the borders of the Territory.

The area of Payne County is 484,000 square acres. The court-house is valued at \$5,000, its furnishings at \$2,000, the jail and steel cells at \$4,100, and the ground on which they are located at \$5,000.

The county poor farm is valued at \$5,000, and the steel and wooden bridges throughout the county at \$100,000.

There are 8,227 persons of school age, 102 school districts, and 198 quarter sections of school land in the county.

The total assessed valuation of property in the county, as equalized by Territorial board of equalization, is \$3,488,660.

#### FINANCIAL STATEMENT OF COUNTY.

Total amount expended for county purposes	\$41,039.37
Total aggregate indebtedness of county	79,000.00
Total amount of taxable property	3,745,153.00
Amount of bonded indebtedness	78,000.00
Outstanding indebtedness of all kinds (poor farm)	1,000.00
Amount of sinking fund on hand	6,673.82
Amount of taxes collected	134,459.35

Rate of tax levied, 10.75 mills.

#### NEWSPAPERS PUBLISHED IN THE COUNTY.

*Daily*.—Stillwater: Democrat.

*Weekly*.—Stillwater: Gazette, Advance, Common People. Perkins: Journal. Cushing: Herald, Independent. Glencoe: Mirror, Yale: Lance. Quay: Transcript.

*Monthly*.—Stillwater: College paper.

#### POTTAWOTAMIE COUNTY.

[J. L. Merritt.]

In the southeast corner of the Territory is situated the prosperous county of Pottawatomie, one of the most populous and progressive counties of Oklahoma. Its area is 501,000 acres. The general contour of her surface is undulating, but not rough. Her face is cut from west to east by the waters of the North Canadian River, Little River, and Salt Creek. The former is capable of great water-power development. The turbulent waters of the South Canadian River wash her southern shores. Numerous small springs dot her surface, and a goodly supply of pure, cold soft water is found at a depth of from 15 to 50 feet.

Agriculturally she possesses great possibilities in diversified farming. Here all the cereals are successfully grown in profusion. Vegetables attain in both size and quality to a high state of perfection, and tame grasses and clovers are becoming plentiful and popular. The Elberta and kindred strains are the best and most profitable peach, some growing to the enormous size of 12 inches in circumference. The popular apple is found in the Ben Davis, Arkansas Black, Mammoth Black Twig, and similar hardy growers and safe shippers.

Being about 30 inches annually, the average rainfall insures bountiful crops without irrigation, and guarantees to the roving herds of blooded cattle a luxuriant growth of native grass and a fresh supply of running water. But the cattle industry is being rapidly supplanted by the "man with the hoe," for which the county is better adapted.

The north half of the county is nearly level prairie, interspersed with beautiful wooded parks of oak, walnut, cottonwood, pecan, and elm. The south half is more hilly, and was originally one vast forest of various timbers, some of which are quite valuable for building purposes. Building stone and sand are found throughout the county.

Although but 12 years old Pottawatomie County boasts a population of 50,000. Within her borders are 30 towns, from the cross-road post-office to metropolitan Shawnee of 15,000 souls, all enjoying prosperity. Her school children number 13,000, and they are taught by efficient teachers in 180 rooms. Both her business and public school facilities are excellent.

In manufactories this county is making rapid strides. Cotton gins, sawmills, and corn burrs are found in almost every township, and in Shawnee and Tecumseh, the county seat, are heard the buzzing wheels of cotton gins, cotton-seed-oil mills, compresses, electric motors, canning factories, flour mills, roundhouses, machine shops, bottling works, shirt and overall factories, ice freezers, gas factories, and many other labor-employing industries too numerous to mention.

The county enjoys a complete telephone system (Bell and independent companies) throughout her confines, and by the operation of 10 rural free-delivery routes (3 from Shawnee, 3 from Tecumseh, 3 from McCloud, and 1 from Romulus) about 1,000 families are accommodated with daily mail.

On account of the high grades, the sandy soil, the frequent rains, and inadequate road laws, the condition of the public highways is deplorable, the radical betterment of which is promised only in the passage by Congress of the "good roads appropriation bill," the use of convict work thereon, and the bestowing upon the Territory the privilege of statehood. The county has recently been organized by township clubs into a good-roads association, and much interest has been aroused by local agitation and the liberal distribution of good-roads literature by the road inquiry office at Washington.

The prospects for oil, coal, and gas are flattering, as revealed by test wells being sunk. Sand and brick clay abounds.

In railroad facilities Pottawatomie County is liberally blessed, both really and prospectively. Two roads, Rock Island (Choctaw) and "Katy" (Missouri, Kansas and Texas), traverse the county from east to west, and the Choctaw and Santa Fe from north to south. Two other lines have been surveyed diagonally across the county, which, if built, will cross each other near the center of the county between Shawnee and Tecumseh.

The two particular products of the county that are truly remarkable are the cotton crop and the potato shipment. The former amounts to 50,000 bales annually, worth about \$3,000,000. Of the latter, 250,000 bushels were shipped from the county this year up to July 1, which brought to the raisers \$175,000. The second potato crop will be equally as valuable.

Two features of this county that are truly remarkable are: First, the continued prosperity of Shawnee; second, the renewed activity of Tecumseh, the pretty, pushing county seat of prosperous Pottawatomie.

The school population is 12,846, the number of school districts 118, and the number of quarter sections of school land 168.

County property is valued as follows:

Court-house ..	\$25, 000
Jail .....	5, 000
Grounds .....	7, 000
Safes and furnishings .....	5, 000
Poor farm .....	5, 000
Bridges .....	5, 000
Total .....	52, 000

## FINANCIAL STATEMENT OF COUNTY.

Total amount expended for county purposes-----	\$61,689.28
Total aggregate indebtedness of county-----	66,200.00
Total amount of taxable property-----	4,020,185.00
Amount of bonded indebtedness-----	50,000.00
Amount of sinking fund on hand -----	7,976.14
Amount of taxes collected-----	208,866.20

Rate of tax levied, 14 mills.

## NEWSPAPERS PUBLISHED IN THE COUNTY.

*Daily*.—Shawnee: Quill, Herald, Evening News.

*Weekly*.—Tecumseh: Republican, Democrat, Standard. Shawnee: Quill, Herald, News, Labor World. McLoud: Sunbeam, Standard. Asher: Altruist. Earlboro: Times. Waunette: Journal. Winner.

*Monthly*.—Sacred Heart Indian Mission: Indian Advocate.

## ROGER MILLS COUNTY.

[George W. Seifert.]

The area of this county is 757,000 acres. In general, the topography of the county is somewhat hilly, though there are large areas of comparatively level tracts, with occasional quarter sections where the entire 160 can be put to the plow. The rougher portions are along the breaks of the streams, the smooth lands being the higher levels between the streams. Of these streams, the North Fork of the Red River marks the southern boundary of the county, and the lands along this stream and its tributaries are more level, or, perhaps, properly speaking, more smoothly undulating than those adjacent to the Washita River, which flows through the northern portion of the county.

The third largest stream, a tributary of the Washita, beginning in the central-western portion of the county, is called Sandstone, and flows in a northeasterly direction, and between these three and their tributaries the agricultural lands of the county have been almost entirely taken up. As an illustration of the extent to which this is the case, we take the municipal township of Berlin as an example. Its location is nearly central in the county, being 12 miles wide by 13 long. In this entire township there are only four 40-acre tracts open to original filings.

The soil composing these lands is, in the main, a sandy loam, the higher levels being a light sand, followed on the next lower levels by a red sand, this being intermixed with the light of the higher and a tendency to clay, or what are termed "light lands," on the lower levels, while the lowest, next the Washita and North Fork, are again white sand. In fertility all of this land compares favorably with that of any of the Great Plains region. Owing to the fact that these lands have been so completely taken up for agricultural purposes, stock raising is an industry of the past, except in small bunches. Up to about the years 1898 to 1900 these lands were inclosed by cattle owners in large tracts under drift fences, virtually dividing the county into something like half a dozen large pastures, in which cattle were bred and fattened for the market on the native grasses of the county, and though these lands were opened to homestead settlement in April, 1893, it was not until about 1899 that settlers, finding out their agricultural value, began coming in large numbers, and to-day at least one-fourth of the entire acreage is turned to the plow.

While the streams of the county are not large, they have the peculiarity of carrying an underflow, which shows in never-failing pools the entire length of their course, tributaries included. This underflow is also indicated by the wells dug all over the county. In these it is sometimes necessary to go to a depth of 100 feet in the western part of the county before a sufficient supply of water is found. In the central and eastern portion the average depth is from 20 to 30 feet, the water being clear and soft. The numerous springs found are also indicative of this underflow, and many speak of their land as being sub-irrigated.

While the streams of the county were at one time well skirted with timber, the exigencies of the early settlers soon made way with it, and to-day there are but few bodies of saw timber left. Of these, the larger portion is cottonwood and walnut. Wood lots are to be found on nearly all the tributaries,



and are a mixture of elm, cottonwood, walnut, box elder, hackberry, and coffee bean.

The stone outcroppings along the breaks are nearly all of red sandstone, much of which has been used for building purposes and found very durable.

Owing to the fact that the tests of the agricultural value of these lands are still in their infancy, not much can be said of their value.

Peaches have, as in most of the Territory, received the most attention, and have done well. Some apples were exhibited at the county fair held in Berlin in 1903, the first raised in the county. Grapes, blackberries, and dewberries are so far showing a luxuriant growth and abundant production.

The most successful products of the soil have so far been cotton, corn, milo maize, Kaffir, millet, wheat, and oats.

But one railroad crosses Roger Mills County, the Choctaw, Oklahoma and Gulf, now owned by the Chicago, Rock Island and Pacific. Since its advent, in 1901, two towns have sprung into existence, Elk City and Sayre. Of these, Elk City is the largest town in the county. Sayre has a population of 700, followed by Cheyenne, the county seat, located in the northern part of the county, with a population of 500. Each of these towns supports a large school, while the county itself is divided into more than 80 school districts, with a school-house and teacher for each. Churches are also numerous, not only in the towns, but several are also found in the country districts. Elk City and Sayre each have 2 cotton-ginning plants, and Cheyenne has 1. A number of small custom grist mills are to be found through the county, and a large flouring mill was erected at Sayre this year, while both Sayre and Elk City have grain elevators. Scattered throughout the county are no less than 20 post-offices, which are connected by star-route connection with the railroad offices. A rural free delivery has also been established from Sayre, supplying patrons in a northwesterly direction from that town, and several more routes are in contemplation. Telephone systems are also to be found. The principal towns and offices connected are Elk City, Sayre, Cheyenne, and Berlin.

The roads of the county are in more than usually good condition for a new county. The main roads north and south and east and west have been worked and bridged, and others are following.

Indications are favorable for coal, oil, and gas in many parts of the county, and much may be expected from future developments.

The population of the county, according to the assessor's returns for 1904, is a little over 15,000.

The altitude averages about 2,300, making the nights cool and pleasant no matter how warm the days may be.

While this county has been comparatively a recent addition to the Territory, its brilliant agricultural prospects, together with the enterprising class of citizens who are making homes within its borders, are fast putting it in the front ranks of its sister counties.

The value of the court-house has been placed at \$2,000, its safes and furnishings at \$1,500, jail and cells at \$2,500, and court-house grounds at \$1,000.

The bridges of the county are valued at \$10,000.

There are 5,120 persons of school age, 78 school districts, and 265 quarter sections of school land in the county.

The valuation placed by the assessor on all property in the county is \$1,630,259.

#### FINANCIAL STATEMENT OF COUNTY.

Total amount expended for county purposes.....	\$24,994.61
Amount of county warrants outstanding.....	41.00
Total aggregate indebtedness of county.....	38,982.73
Total amount of taxable property.....	1,630,259.00
Amount of floating indebtedness, judgments.....	1,391.73
Amount of bonded indebtedness.....	37,550.00
Outstanding indebtedness of all kinds.....	38,982.73
Amount of sinking fund on hand.....	1,156.94
Amount of taxes collected.....	53,357.87

Rate of tax levied, 19 mills.

#### NEWSPAPERS PUBLISHED IN THE COUNTY.

*Weekly*.—Cheyenne: Sunbeam, Star. Elk City: Roger Mills Democrat, Elk City Democrat, Record. Sayre: Headlight, Standard.

## WASHITA COUNTY.

[Robert Steele.]

Washita County is 24 miles wide and 42 miles long, and has a population of about 25,000 people. Its area is 645,440 square acres.

The country is a beautiful prairie, some parts perfectly level and others gently undulating, with soil very fertile, of red sandy loam. The annual rainfall is about 30 inches.

Almost every variety of fruit grows well, most attention being given to apples, peaches, and plums.

Stock raising is not now carried on as extensively as it was a few years ago, the greater part of the land being devoted to agriculture.

The Washita River flows through the county from north to south, which, with its many tributaries, furnishes abundant water supply for stock and other purposes. Many springs are in the west part of the county, furnishing never-failing streams of clear water. Several varieties of timber grow on the banks of these streams, none of which are in sufficient quantities for lumber.

In many parts of the county are found large deposits of building stone, mostly red sandstone.

The largest town is Cordell, the county seat, which has a population of 1,500. The public school building is an eight-room stone structure. Four hundred pupils were in attendance last year.

There are two banks, one of them a national, occupying a two-story pressed-brick building, and the other, a private bank, will soon be doing business in its new building, which when completed will cost \$12,000.

The Board of Education of the Reformed Church of America in New York City have obtained a site and will at once erect a \$10,000 academy building in Cordell.

Foss is a town of about 1,000 people, located in the northwest part of Washita County, on the Choctaw, Oklahoma and Gulf Railroad. There are several other smaller towns and post-offices, among which are Bessie, Rocky, Canute, Wood, Sentinel, Dill, Cloud Chief, Shelly, Korn, Colony, Seger, and Cowden.

The Washita Valley Telephone Company connects all towns in the county and adjoining counties.

Two rural free-delivery routes run out of Cordell, and petitions are now before the Department asking for 4 more.

Cotton gins are located in the county as follows: Two at Cordell and 2 at Foss. One at each of the following towns: Bessie, Rocky, Dill, Wood, Canute, and Cowden.

A large flouring mill of 300 barrels capacity is located at Cordell, also 1 at Foss. Cordell has 3 grain elevators.

Wheat, corn, broom corn, oats, cotton, and alfalfa are the principal crops.

Railroad facilities are afforded all parts of the county by the Rock Island along the south line, and by the Choctaw, Oklahoma and Gulf along the north line, and the Frisco traversing the county from north to south. The Kansas City, Mexico and Orient also crosses the county from north to south, but is not yet in operation.

There are 7,541 persons of school age, 103 school districts, and 256 quarter sections of school land in the county.

The assessed valuation for 1904 is \$2,463,028, as equalized by Territorial board of equalization. The county court-house is valued at \$3,000, and the block of ground on which it is located \$1,000. The jail and cells, together with real estate, are valued at \$1,300, and the bridges of all kinds in the county at \$40,000.

## FINANCIAL STATEMENT OF COUNTY.

Total amount expended for county purposes.....	\$13,601.76
Amount of county warrants outstanding.....	100.00
Total amount of taxable property.....	2,269,957.00
Amount of bonded indebtedness.....	78,000.00
Outstanding indebtedness of all kinds.....	78,100.00
Amount of sinking fund on hand.....	4,518.19
Amount of taxes collected for county purposes.....	27,148.90
Rate of tax levied, 10.2 mills.	

## NEWSPAPERS PUBLISHED IN THE COUNTY.

*Weekly*.—Cordell: Herald-Sentinel. Beacon, News, Oklahoma Vorwarts (German). Foss: Enterprise. Canute: Banner.

## WOODS COUNTY.

[A. C. Beeman.]

Woods County has a population of 66,650. Area, 1,732,000 square acres. The surface is generally a gently rolling prairie, diversified here and there with small streams emptying into the two rivers of the county, the Salt Fork of the Arkansas in the northern part of the county, which has a southeasterly course, and the Cimarron, which enters the county in the center of the west line and runs southeast and leaves the county near the southeast corner. The extreme northwest part of the county is rough, and south of the Cimarron River is a cluster of hills known as the Glass Mountains and containing immense beds of gypsum and probably other valuable deposits of mineral.

The soil is generally a dark reddish brown in color and of a sandy loam shading off into districts more or less sandy.

The soil is fertile and adapted to the culture of wheat, corn, oats, broom corn, cane, Kaffir corn, and fruits, such as the apple, peach, plum, and grape.

The county was originally considered a cattle country, being covered with a luxuriant growth of buffalo, blue-stem, and bunch grass; but to-day the wheat, corn, broom-corn, and alfalfa fields have taken the place of the large herds of cattle, and the county is rapidly becoming one of the leading sections of the country in agriculture.

The county is well watered, having besides the two rivers above named numerous smaller streams in all directions fed by springs which empty into these two main water courses.

The most noted of these inferior streams is the famous Eagle Chief, draining a large area of very fertile and productive land and emptying into the Cimarron 14 miles south of the center of the county.

There is a belt of timber on either side of the Cimarron, valuable only for fuel and posts.

The towns of the county are Alva, the county seat. Alva has a splendid public school building and system, and also the Northwestern Normal School, one of the best institutions of the kind in the Southwest.

Carmen is the next town in size and is in the center of the county. It has a fine two-story brick schoolhouse and a public school system and corps of teachers worthy of a town of several times the population. Carmen also has the advantage of three railroads.

Other towns are Cherokee, Ingersoll, Byron, Cleo, Fairview, Ringwood, Helena, Aline, Waynoka, and other still smaller towns. Most of these towns have good school buildings and all have ample accommodation for the school children of their locality.

There are post-offices all over the county, and most of the railroad towns are establishing rural free-delivery routes, so that there is no section of the county but what can be quickly and easily reached by mail.

The Southwestern Telephone Company has a line of telephones through the center of the county from north to south, and there are two independent lines in the county besides the lines owned and operated by the farmers of various sections of the county, so that most parts of the county are easily reached by telephone, and particularly the east half of the county. Nearly every town in the county has connection with the outside world by telephone.

The country roads are generally good, and the public interest in keeping them good and making them better is growing.

Woods County has six railroads—The Santa Fe running across the northwest corner of the county, entering on the north boundary near the center line and running southwest and leaving the county near the center line on the west boundary; the Kansas City, Mexico and Orient (or Orient) running clear through the central part of the county from north to south; the Choctaw Northern through practically the same part of the county, with a branch from Ingersoll to Alva; the Arkansas Valley and Western entering the county on the east line 5 miles south of the center line and running in a northwesterly course across the county, crossing the Kansas City, Mexico and Orient and the Choctaw Northern at Carmen and forming a junction with the Santa Fe at



Avard, which is 7 miles north of the center line; the Rock Island in the southeast part of the county, and the Frisco also in the southeast part of the county.

There are 15,397 persons of school age, 280 school districts, and 1,223 quarters of school land in the county.

The total assessed valuation of all property in Woods County is \$7,118,533.

Property owned by the county is valued as follows:

Jail .....	\$2, 500
Real estate .....	1, 500
Safes and furniture .....	3, 000
County bridges .....	43, 000

#### WOODWARD COUNTY.

[S. B. Laune.]

Estimated population, 30,000. Its area is 2,124,000 acres. General topography of the county, northeast quarter rough and rolling, with high divides and narrow valleys. The southeast corner rolling and undulating, with good, rich soil, including a sandy strip 2 to 5 miles wide, covered with black-jacks and running in a southeasterly direction to the southeast corner of the county. The soil in the eastern part of the county is mostly of a heavy red loam and strong; the western half of the county level and rolling and undulating, all tillable, and varying from a red loam to a black loam. The county has passed from a stock country to an agricultural country within the last three years, and all the desirable Government land has been filed upon.

Our annual rainfall, according to statistics kept by the United States Government at Camp Supply, averaged a little over 26 inches for a period of a little over six years, and there are peach trees at Camp Supply now over 25 years old and in a bearing condition, showing the remarkable vitality of peach trees in this locality.

Native fruits are persimmons, plums, wild cherries, wild currants, and grapes; while among the cultivated varieties peaches, pears, apples, apricots, nectarines, blackberries, plums, and mulberries are doing especially well, and a number of fair-sized orchards have been planted, which promise to disprove the opinion generally held that apples will not do well in this county.

Along the streams are ranges of sand hills, which make stock raising particularly profitable in those regions, while the valleys and level land are more profitable for farming.

The native grasses are buffalo grass and summer grass or flat-blade grass, both being rich and succulent.

Woodward County is especially well watered, having three principal streams, the Cimarron, Wolf, and North Canadian rivers, with numerous tributaries which run a part of the year, and a great many springs along the tributaries and principal streams. Two irrigating ditches are taken from the Cimarron in the northwest part of the county, and the land is wonderfully productive under said ditches. There is no waterpower in Woodward County that has been utilized up to the present time.

We have timber consisting of walnut, cottonwood, oak, hackberry, elm, ash, willow, china berry, and small varieties of brush, also cedar, and a large quantity of black locust trees that are being planted by the people of the county. The surplus timber of the county has been worked up by the sawmills. We have the red sandstone and limestone, both good for foundations, but hard to work for building purposes.

Woodward is the largest city in the county and the county seat, while Mooreland and Gage are the next in size. Woodward County has 234 school districts and a school population of 8,500.

In the vicinity of Woodward there are a few small tomato-canning establishments.

The Home Telephone Company, of Woodward, organized by home capitalists, extends over Woodward County, north, south, east, and west, and the line is being extended as required by the citizens. The line reaches from Woodward to Fort Supply, Mutual, Shattuck, Mooreland, Gage, and, in fact, all the towns in the county.

Rural routes run from Woodward to all points in the county off the railroad, and arrangements have been made whereby the farmers can get their mail at

frequent points along the routes, there having been boxes put up for that purpose.

The roads are in poor condition, and an effort is being made to purchase some good road machinery, in order that we may have good roads. There are three bridges across the North Canadian River, besides numerous other small bridges across the smaller streams.

Our mineral resources are undeveloped as yet.

The most remarkable product of our county is the grape. This seems to be the natural home of this fruit. A crop is seldom missed of the domestic grape, and the quality is very fine. The vines are very vigorous growers and bear very full. Their cultivation could be made exceedingly profitable. Also the production of broom corn, the soil and the climate being especially adapted to the cultivation and marketing of this crop, also castor beans. These crops never miss, and for poultry raising no better location can be found.

We have one railroad, a part of the Atchison, Topeka and Santa Fe system, known as the Southern Kansas, which runs diagonally across the county from Kiowa, Kans., to Higgins, Tex. We have a great deal of railroad prospecting coming from almost every point of the compass, but how soon they will materialize time alone will determine. The most important in contemplation is the one running from Oklahoma City through Woodward County and the city of Woodward, on northwest through Fort Supply. This road would give us connection directly with the Gulf of Mexico, and enable us to exchange the products of northwest Oklahoma with central Oklahoma, and give us deep-water rates to the Gulf, and also cheap fuel from the northwest, all of which is much to be desired and highly important auxiliaries in the future development of this country.

The court-house building is valued at \$4,100 and safes and other furnishings at \$7,000, the jail at \$3,700, and the grounds on which all are located at \$1,500. The value of the bridges in the county is placed at \$14,000.

#### NEWSPAPERS PUBLISHED IN THE COUNTY.

*Weekly*.—Woodward: News, Bulletin, Dispatch. Gage: Record. Curtis: Courier. Fort Supply: Republican. Mutual: Enterprise. Quinlan: Mirror. Mooreland: Leader. Shattuck: Homesteader.

*Semimonthly*.—Woodward: Live Stock Inspector.

#### FINANCIAL STATEMENT OF COUNTY.

Total amount expended for county purposes	\$49,422.03
Amount of county warrants outstanding	10,731.72
Total aggregate indebtedness of county	58,460.16
Total amount of taxable property	2,805,435.00
Amount of floating indebtedness	660.16
Amount of bonded indebtedness	25,000.00
Outstanding indebtedness of all kinds	58,460.16
Amount of sinking fund on hand	5,345.83
Amount of taxes collected	116,915.17

Rate of tax levied, 26.5 mills.



COLORADO

K

A

N

S

A

S

NEW MEXICO

KANSAS

MISSOURI

ARKANSAS

LOUISIANA

TEXAS

# MAP OF OKLAHOMA TERRITORY.

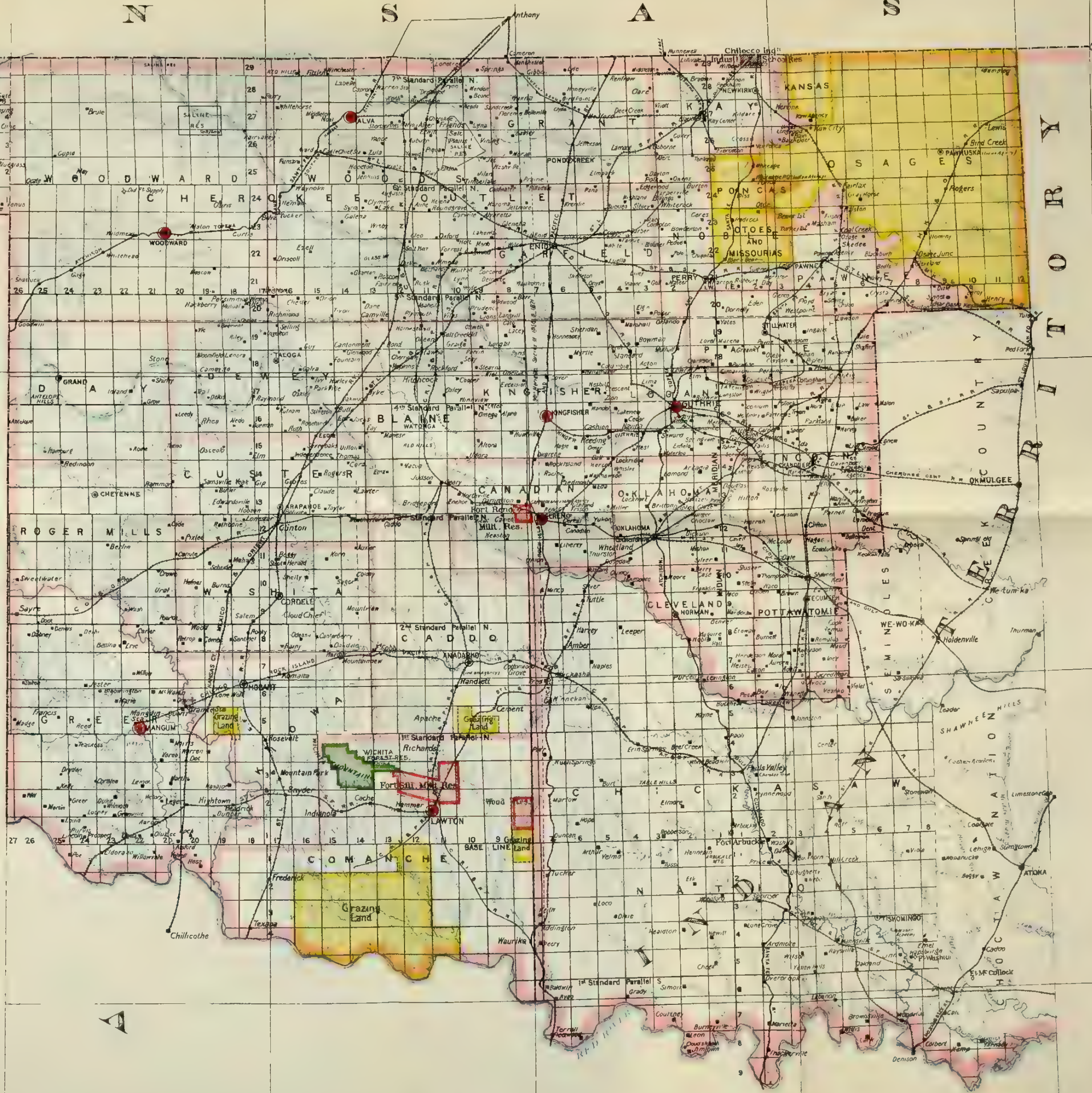
Compiled from the Official Records of the General Land Office and from data on file in the Executive Office of the Territory, to accompany the Annual Report of the GOVERNOR OF THE TERRITORY, 1904

Compiled from the official Records of the General Land Office and other sources under the direction of FRANK BOND, Chief of Drafting Division G.L.O.

Scale: 1 Inch = 12 Miles

## LEGEND.

- U.S. Land Offices
- Rail Roads constructed
- do proposed
- Roads and Trails





# ALCOHOL

ALCOHOL, 100% (100% V/V)

100% V/V (100% V/V)

100% V/V (100% V/V)

100% V/V (100% V/V)

11

100% V/V (100% V/V)

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